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GOVERNMENT OF NORTHERN IRELAND

ELEVENTH GENERAL REPORT OF THE MINISTRY OF AGRICULTURE

Presented to Parliament by Command of His Grace the Governor of Northern Ireland

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ON BEHALF OF THE GOVERNMENT OF NORTHERN IRELAND
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Cmd. 180.

Government House,

Hillsborough,

Northern Ireland,

6th May, 1937.

SIR,

I am directed by His Grace the Governor to acknowledge the receipt of your letter of 3rd May submitting to His Grace the Eleventh General Report on the work of the Ministry of Agriculture covering the period 1st October, 1931, to 30th September, 1934.

I am, Sir,

Your obedient Servant,

F. LEWIS HASLETT (Mrs.)

Assistant Private Secretary.

The Secretary,

Ministry of Agriculture,

BELFAST.

GOVERNMENT OF NORTHERN IRELAND.

ELEVENTH GENERAL REPORT

OF THE

MINISTRY OF AGRICULTURE.

To His Grace, James Albert Edward, Duke of Abercorn, K.G., K.P., Governor of Northern Ireland.

May it please your Grace,

I have the honour to submit the Eleventh General Report of the Ministry of Agriculture. It is unusual for a Government Report to begin with apologies, but the exceptional delay in the publication of this Report calls for some comment. During the past few years my Ministry has been occupied with the preparation of schemes for the revival and development of the agricultural industry in Northern Ireland, and owing to the heavy demands made upon the Ministry's staff there has been until recently no time to take a comprehensive view of the position. Thus, while this Report nominally covers the operations of the Ministry from the 1st October, 1931, to the 30th September, 1934, the opportunity has been taken to follow up to the date of going to press the effects of the various Acts and schemes instituted in these years for the improvement of agriculture.

It may be said that this extension of the period of review improves the report by making possible a less disjointed account of the plan of assistance to the industry than would follow from the treatment of each year's work in a separate report.

The report falls into two parts—the first describes agricultural conditions in Northern Ireland, the principles on which agricultural policy has been based and the manner in which the various Acts and Schemes under the direction of the Ministry have been administered. The second gives a more detailed account of the various branches of the Ministry's work, together with statistical tables.

The measures taken by the Imperial Government and the Government of Northern Ireland between 1931 and 1934 to assist agriculture in the United Kingdom and to reorganise the marketing of Agricultural produce were not strictly speaking the first of their kind. Between 1920 and 1931 in Northern Ireland alone over £200,000 were spent annually out of public money in respect of agricultural education and research and Live Stock Schemes, to say nothing of indirect assistance to the industry in the form of de-rating relief and rebates on freight charges. Moreover, a number of Acts, the functioning of which is described in another part of the Report, were passed before 1931 with the object of improving the quality of agricultural produce for sale on the British market.

The legislation passed between 1931 and 1934, however, provides for assistance to agriculture and for the reorganisation of the marketing of agricultural produce in a far more comprehensive manner than before. Under the Import Duties Act of 1932 which imposed a 10 per cent. *ad valorem* duty on a large number of agricultural imports H.M. Government in the United Kingdom abandoned the policy of free food imports into this country, and agricultural produce in the United Kingdom received its first measure of protection—barring a brief period during the war—since the Corn Laws were repealed in 1846. The system of import regulations which it was possible to introduce once the protective principle had been adopted provided the necessary conditions for the expansion of the home produced supply of certain products, and for their price to be stabilised at a level remunerative to the farmer. These developments in agricultural organisation are, as the amount of discussion aroused by them will testify, of far-reaching importance, and it is essential that their implications and intentions should be made as clear as possible.

It is proposed therefore in this part of the report, even at the risk of repeating what has been said elsewhere, to give not merely a bare account of the legislation which was introduced by the Ministry between 1931-34, but also to direct attention to the policy underlying this legislation by reference to the conditions which prevailed in agriculture in Northern Ireland during 1931 and 1932.

It is desired in the first place to deal with the general economic condition of Northern Ireland agriculture considered as a single industry, and the principles on which the main plan of governmental assistance was based: and secondly, to consider individually the conditions in the branches of the industry concerned with the production of pigs, milk, wheat and cattle and the schemes of assistance instituted for each.

The Agricultural Crisis.

The combined index of wholesale prices for certain agricultural products in Northern Ireland gives some indication of changes in economic conditions in agriculture. This index stood in 1931 at 78 (Base year 1923=100) and in 1932 had fallen still further to 69. Turning to individual commodities the index shows that egg prices had fallen to 69 in 1931 and in 1932 to 65 ; creamery butter to 65 in 1931 and 62 in 1932 ; cattle to 81 in 1931 and 76 in 1932, and pork to 64 in 1931 and 59 in 1932. While these figures do not take into account the falling price of feeding stuffs and fertilisers, evidence of a decrease in profits as well as prices is found in the fall in the value of the net output of Northern Ireland farms from £11,300,000 in 1924-25 to £9,500,000 in 1931.

The effect of this decline in wholesale prices is marked in the shrinkage in agricultural employment in Northern Ireland between 1924 and 1932. While 136,659 males over 18 were occupied in agriculture in 1924 only 123,695 were so occupied in 1932, and the number of males under 18 employed on the land decreased from 17,034 in 1924 to 7,811 in 1932. A decrease of 14 per cent. in the total number of males occupied in agriculture between 1924 and 1932 thus coincides with a decrease of 54 per cent. in the number of boys employed on the land. The trends illustrated by these figures were marked in a somewhat similar degree in Great Britain and in view of the serious threat to national welfare implied in the increasing impoverishment of agriculture, it was felt that the Imperial Government and the Government of Northern Ireland should take more comprehensive measures than they had hitherto adopted to assist the industry.

In order to show to what extent it was possible for the Governments concerned to meet the crisis, it may be well to set down here very broadly the factors which appeared to be immediately responsible for the agricultural price fall in this country. In the first place, Britain's return to the Gold Standard in 1926 and the stabilisation of the pound at a higher level in comparison with foreign currencies than had ruled since the Great War enabled foreign countries to sell their agricultural produce on the British market at lower prices than before 1926 and the prices of home-grown produce were accordingly depressed, while overhead charges and debts which were fixed on a long term basis remained unchanged. The hope that the abandonment of the Gold Standard in 1931 would provide the farmer with relief from the burdens imposed by the adoption of the Gold Standard in 1926 was, unfortunately, short-lived for certain countries from which we took a large proportion of our food supplies followed the United Kingdom's example in depreciating their currencies.

The break-down of the World Economic Conference at the end of 1931 finally killed the expectations of an improvement in agricultural prices through a monetary readjustment.

Apart from monetary factors, two phenomena appeared to be closely associated with the decline in the prices of United Kingdom agricultural produce :

(i) the industrial depression of 1929 and the concomitant decrease in consumers' purchasing power ;
(ii) the world surplus of certain agricultural products which found their way at low prices to the free British market.

It was apparent that the restoration of industrial prosperity could not be achieved in a sufficiently short time to bring relief to the farmer : and while it might have been possible to compensate for the decrease in effective demand among the poorer classes by encouraging the consumption of certain home-grown foodstuffs among the better-off, no practicable means had been devised whereby milk and potatoes, for example, could be made there and then as attractive as other less commonplace goods. In the circumstances, therefore, it appeared that the most effective way of staying the fall in the agricultural price level was to restrict the imports of certain agricultural products which were being sold on the unprotected British market in some cases at prices lower than the cost of production of the same commodities in the United Kingdom.

Certain social and political circumstances, however, made it necessary as far as possible to limit the use of supply restriction. In the first place, only 7 per cent. of the total population of the United Kingdom is occupied in agriculture; the great majority of the population are simply consumers and have, therefore, a common interest in obtaining cheap food. The restriction of supplies from abroad, other things being equal, may involve an increase in the retail, as well as the wholesale, price of food. Such an increase in the cost of living must react unfavourably upon agricultural prosperity by reducing the demand of the poorer sections of the community for the foodstuffs whose prices are inflated and by prejudicing the great bulk of the population against a policy for the betterment of agriculture.

It was clear, moreover, that unlimited protection for agriculture would react unfavourably upon other industries. Since the industrial revolution the prosperity of these islands has depended largely upon the sale to overseas countries of coal, iron, steel, cotton, linen and wool, and goods manufactured from these materials and many countries, such as the Argentine and Denmark, are enabled to buy British industrial goods by the fact that Britain takes in return their chilled meat, eggs or butter, as the case may be. Any serious restriction of supplies of

agricultural produce from these countries would, therefore, have the effect of damaging industrial interests in the United Kingdom.

From the point of view of a policy for the revival of agriculture in the United Kingdom, the Dominions constitute an especially difficult problem. While it was found necessary to limit imports of agricultural produce from Denmark and the Argentine and other countries exporting agricultural products to this country and importing industrial goods in return, it was not expedient or desirable to do so to any great extent with imports from the Dominions. Consequently, under the Ottawa Agreements Act the Dominions enjoyed benefits only slightly less favourable than those of the home producer in the now protected market of the United Kingdom.

In view of these disadvantages and limitations to a policy of Protection for the agricultural industry, it was desirable that every possible measure should be taken to improve the competitive position of the British farmer.

In this connexion a number of enquiries in Great Britain, and one comprehensive enquiry in Northern Ireland into the marketing of certain classes of agricultural produce, had revealed that agricultural marketing was carried out by an excessively large number of middlemen; that prices varied unnecessarily from market to market, and from week to week; and that, consequently, the sale of agricultural produce had a speculative quality which stood in the way of progress in efficient production. Thus, providing that the fall in prices could be stayed, there was considerable scope for reform in the marketing of home produce as a means of increasing the return to the producer.

It will be seen, accordingly, that the Governments' policy for the improvement of agriculture consisted of a balance between Protection on the one hand, and, on the other, the reorganisation of the marketing of home produce.

To deal first with the protective aspect of agricultural policy since 1931, there were two convenient methods by which the supplies of agricultural produce from abroad could be restricted, first a direct tariff, and secondly, the quantitative regulation of imports. A direct tariff on agricultural produce was first introduced by the Horticultural Products Act of November, 1931, when duties were imposed on certain semi-luxury foods, such as fruit, flowers and vegetables. The Import Duties Act of January, 1932, imposed a ten per cent. *ad valorem* duty on a large class of agricultural produce, but wheat, maize, meat, flax and wool were left on the free list. In July of that year under the Irish Free State (Special Duties) Act a twenty per cent. duty was

imposed on imports of all classes of meat, butter and cream imported from the Irish Free State, and towards the end of the year, under the Ottawa Agreements Act which followed upon the Ottawa Conference duties on certain agricultural imports from foreign sources were slightly raised after they had been changed from an *ad valorem* to a specific basis. In November, too, the Irish Free State special duties were raised from twenty to forty per cent.

In view, however, of the conditions described above quantitative regulation proved to be a better instrument of protection than a tariff. Either a tariff is not sufficiently high to exclude foreign produce dumped at low prices on the British market or else if raised to an effective height it will result in a considerable increase in the retail price of food. Quantitative regulation, on the other hand, prevents dumping and does not damage the interests of the exporter because it offers to countries exporting agricultural produce to Great Britain the benefits of the increased wholesale price which accrue from restricted supplies. Lastly, since the imported quantity of any product can be adjusted so as to vary with home production and the needs of the home market, quantitative regulation may be used to secure the progressive expansion of home production and it is, therefore, a valuable instrument of reorganisation.

Quantitative regulation was first brought into practice in November, 1932, when foreign and Dominion countries exporting bacon and hams to the United Kingdom voluntarily agreed to limit their exports to stated quantities. Provision was made under the Ottawa Agreements Act of 1932 for the quantitative regulation of beef, mutton, and lamb, and in 1933/34 agreements were negotiated with certain foreign countries restricting imports of chilled beef, frozen mutton and lamb, processed milk and cream, potatoes, fat cattle, oats and eggs. These were, however, voluntary agreements. Quantitative regulation is provided with a statutory basis and linked with the reorganisation of the agricultural market in the Agricultural Marketing Act of 1933, and since this Imperial measure had considerable influence upon agricultural policy in Northern Ireland a brief account of its main provisions is necessary in this Report. It should, perhaps, be pointed out that the Agricultural Marketing Act, 1933, represents a development of the Agricultural Marketing Act of 1931, but since the latter applied only to Great Britain no account of it need be given in this Report.

The Agricultural Marketing Act, 1933, enabled the Board of Trade, after consultation with the Minister of Agriculture and Fisheries and the appropriate Ministers for Scotland and Northern Ireland, to make Orders regulating either the quantity or the

quality, or both, of the importation into the United Kingdom of any agricultural produce if it appeared—

(*a*) " that there have been or are being taken such steps as are practicable and necessary for the efficient reorganisation by means of agricultural marketing schemes under this Act of those branches of the agricultural industry in the United Kingdom in the interests of which the Order is made " ; and

(*b*) " that without an Order under this section the effective organisation and development of the said branches of the agricultural industry in the United Kingdom under such Schemes as aforesaid cannot be brought about or cannot be maintained."

In short, protection is only given to the agricultural industry, provided that those occupied in the industry set their own house in order.

Apart from providing a statutory basis for quantitative regulation the Agricultural Marketing Act, 1933, is of special interest to Northern Ireland in that it enables the Ministry of Agriculture, under certain conditions, to regulate the removal of products from Northern Ireland to Great Britain. This provision removed a number of difficulties which were later encountered in the operation of the Pigs Marketing Scheme which was brought forward under the Agricultural Marketing Act (Northern Ireland), 1933. This latter Act gives power to the Ministry of Agriculture to frame a scheme regulating the marketing of any agricultural product in Northern Ireland if the Ministry is satisfied that such a scheme is necessary for the more efficient production and marketing of that commodity. In any case where, as a consequence of the restriction on the importation of a product into the United Kingdom, an Order has been made by the British Government regulating the sale of that product in Great Britain it is compulsory for the Ministry to frame a complementary scheme for operation here. In framing a scheme the Ministry must take into consultation producers of the product in question and immediately an Order has been made the Scheme must be submitted for the approval of Parliament.

The interesting feature of this measure is that while it is compulsory for the Ministry to frame a scheme for the marketing of any agricultural product, the importation of which has been regulated under an Order of the Agricultural Marketing Act of 1933, the Ministry is at the same time left completely free to construct the scheme on lines which are suited to the peculiar needs of the industry in Northern Ireland.

THE PIGS MARKETING SCHEME.

The Pigs Marketing Scheme was the first scheme for the reorganisation of agricultural marketing to come into operation under the Agricultural Marketing Act (Northern Ireland), 1933. Before describing the objects and structure of the Scheme some account is required of the conditions in the pig industry with which the Ministry had to deal in preparing for reorganisation.

In this connection a comment in the Ministry's Statistical Report for 1925, when the pig population had fallen to the figure of 112,000, is of considerable interest. It was pointed out that while Northern Ireland, with its small farms and crofts, was admirably suited to pig production, the average number of pigs per 1,000 acres of crops and pasture was only 46 as compared with 103 in England and Wales. In the following year the population increased by 40 per cent., rose still further by 50 per cent. to 236,000 in 1927, and from that year until 1932, it fluctuated slightly around a mean of 221,500. Despite this increase in the level of the pig population the average number of pigs per thousand acres of crops and pasture between 1927 and 1932 was no more than 90, while in England and Wales it was 107.

A further condition favourable to the production of pigs in Northern Ireland was the existence of an extensive bacon curing industry. From 1927 to 1931 Northern Ireland bacon factories absorbed on the average 370,000 pigs per annum, but of these an average of 147,000 pigs were imported either alive or as carcases from the Irish Free State. Even if the output of bacon factories did not exceed the level of 1927-32, it is evident that there was ample scope for increased production in Northern Ireland to take the place of the large quantity of carcases imported from the Irish Free State. Yet in spite of these favourable conditions Northern Ireland farmers were not finding it profitable to produce much more than 40 per cent. of the bacon factories' requirements. Here, as with agricultural commodities in general, the explanation is to be found :

(1) in the general depression of pig prices, and
(2) in the instability and inefficiency of the local system of marketing.

As to (1) the index of Northern Ireland agricultural prices (Base year 1923—100) shows a drop in the price of pork from 120 in 1925 to 88 in 1928, an increase to 100 in 1929 being followed by a sharp decline to 59 in 1932.

Variations in pork prices from week to week and market to market in Northern Ireland aggravated the effects of this long

term price fall. An extreme case of variations between markets occurred on the 6th September, 1930, when 71/– per cwt. was paid for pork at Dromore and 84/– per cwt. at Cookstown, while on the 21st June, 1930, the price at Cookstown was 64/– per cwt. and at Dromore 76/–. Similarly, prices varied from week to week in the same market so that in Portadown in six successive weeks in 1931 average prices ranged from 43/– to 52/– per cwt.

It might be argued that a shrewd farmer could, by holding up his supplies when prices were low and by hard bargaining, turn the instability of prices to his own advantage. Two circumstances, however, made it almost impossible for the farmer deliberately to gain from price fluctuations. In the first place, the practice of killing pigs on the farm on the day before the market took place had for a long time prevailed among Northern Ireland producers. As pig carcases rapidly deteriorate the producer was forced either to sell his supplies on the following day at whatever price he was offered or suffer a complete loss. Owing to the fluctuations in prices he could not at the time of slaughter predict the market price and hence had no guide as to the quantity of pigs which it would be advisable to kill. Frequently, misled by high prices in one week, producers sent large supplies to market in the next week, only to receive a low price as a result of the glut which they themselves had helped to create.

On the other hand, the ability of the farmer to drive a hard bargain was considerably hampered by the existence of an understanding between buyers at many markets regarding the top price they were prepared to pay on any market day. Consequently, while buyers usually had a number of sources of supply, the farmer at any market had only one outlet for his pigs and was not in a position to force the buyer's hand by the threat of taking his goods elsewhere. Though there is evidence that prices varied to some extent according to the quality of the carcases on offer, the cuts made for overweight pigs, or pigs with blemishes were not standardised, and in any dispute on the extent of the cut the opinion of the buyer was almost certain to prevail. Moreover, while normally deductions were made in respect of carcases weighing over 2 cwt., overweight was frequently a secondary consideration to the quantity of carcases on offer and buyers would be prepared to disregard it if the supply of carcases was small. This was, it is true, immediately to the farmer's advantage, but it is an illustration of the almost complete absence of payment for quality.

In view of the uncertainty regarding the price which his pork would obtain the farmer was naturally not over concerned to ensure that his carcases arrived at the market in a first-rate condition. Since his profit depended so much upon chance he

had no incentive to feed his pigs carefully up to a certain weight or to keep his carcases clean. In short, then, the three features in connection with the marketing of pork in Northern Ireland which were outstandingly unfavourable to the producer were first, the instability of prices from market to market and from week to week in the same market; secondly, the inferior bargaining position of the producer vis-a-vis the buyer, and thirdly, the lack of any system of payment for quality.

What is known broadly as the Pigs Marketing Scheme was designed, in the first place, to stay the general fall in the price level, and secondly, by simplifying the marketing of pigs and stabilising prices to provide the producer with the basis of security necessary for progressive and efficient production. The first stage of the plan of reorganisation was, as has already been indicated, the quantitative regulation of imports of bacon in order to make room on the British Market for more home produced pigs. The Lane Fox Commission which inquired into the marketing of pigs in Great Britain recommended that a figure of 10,670,000 cwts. of bacon per annum (the average of the estimated supply during the years 1925-1930) should be taken as representing the total supplies of bacon necessary for consumption in the United Kingdom in any year; that in the first year United Kingdom producers should be responsible for a proportion of this quantity based upon the number of pigs contracted for delivery to bacon curers, and that the remainder should be allocated to the chief bacon exporting countries in a proportion which should be afterwards determined. Following these recommendations voluntary agreements were arranged with the chief bacon exporting countries in 1932 providing for the reduction of their bacon exports to certain percentages of their previous exports, and these agreements became compulsory as the result of an Order made by the Board of Trade on the 7th November, 1933, under the Agricultural Marketing Act, 1933.

With an assured market for greatly increased production it remained for the Ministry of Agriculture for Northern Ireland to secure that a fair share of the benefits of this market should accrue, in the first place, to the producer in Northern Ireland, and secondly, that all producers in Northern Ireland should benefit according to the quality of their production. Hence there were two distinct reasons for instituting a Pigs Marketing Scheme:

(1) That irrespective of the trade policy of the United Kingdom, the marketing of pigs in Northern Ireland was in need of reorganisation owing to wasteful and inefficient methods and to the poor bargaining position of pig producers vis-a-vis the better organised bacon curers, and

(2) That since through quantitative regulation certain advantages were conferred by the Government upon the pig and bacon industries, it behoved the Government to see that on the one hand a fair share of these advantages fell to producers and that each producer benefited according to his merits. On the other hand, it was desirable to ensure that the consumer would be able to purchase a home-product of as high a quality as that which had partly been cut off by quantitative regulation and that he should not suffer from increased retail prices.

The Machinery of the Scheme.

The machinery which was created in 1933 under the Pigs Marketing Scheme is described in Appendix I but since under the Agricultural Marketing (Pig Industry) Act, 1934, important additions were made to the structure of organisation, an account of the existing machinery for regulating the industry may not be out of place.

At the present time the pig industry is regulated by three statutory bodies, the Ministry, the Pigs Marketing Board and the Pig Industry Council. The Ministry has the power to make Orders and Regulations under the various sections of the Agricultural Marketing Acts (Northern Ireland), 1933 and 1934, and the Agricultural Marketing (Pig Industry) Act (Northern Ireland), 1934, all of which are concerned directly and indirectly with the regulation of the Pig Industry. A list of the Orders made under the Agricultural Marketing Act (Northern Ireland), 1933, is to be found in the Appendix. Moreover, certain of the activities of the Pigs Marketing Board and the Pig Industry Council are subject to approval by the Ministry.

The object of the Pigs Marketing Board is to make good the deficiencies in the bargaining power of pig producers to which much of their insecurity before 1933 is attributable. Thus, it provides an organisation through which pig producers can speak with a united voice on all questions affecting the industry. In its advisory and educational capacities, it helps to save producers from errors in marketing which have arisen in the past owing to their ignorance of market conditions. As a trading body it must accept any live pigs offered to it by producers whose names are on the register kept by the Board. Before the scheme was introduced, a producer might have found himself forced to sell his pigs at any price offered to him at the market. Under the new system of price regulation, on the other hand, it appeared that he might find himself with pigs left on his hands but it will be seen that under the Scheme the Pigs Marketing Board meets this difficulty by buying any live pigs that are offered to it by registered producers.

The Pig Industry Council, which is the latest addition to the structure of reorganisation, consists of three representatives of the Pigs Marketing Board, three of bacon curers and three nominees of the Minister of Agriculture. Up to the enactment the Agricultural Marketing (Pig Industry) Act (Northern Ireland), 1934, under which the Pig Industry Council was set up, there existed in Northern Ireland a Bacon Marketing Board. Under the Agricultural Marketing (Pig Industry) Act (Northern Ireland), 1934, the power to regulate bacon production was transferred to the Ministry of Agriculture and the Bacon Marketing Board was wound up. Bacon curers are now organised for negotiating purposes in the Ulster Curers' Association.

The functions of the Pig Industry Council are as follows :— First, to fix prices for pigs sold by producers in Northern Ireland. Secondly, to advise the Ministry regarding the granting of new licences for the curing of bacon under the Agricultural Produce (Meat Regulation) Act of 1930, with a view to regulating the expansion of the bacon industry in the interest of efficient production of pigs and bacon. Thirdly, to initiate experiments in certain spheres in which it appeared that further knowledge was desirable to assist in the regulation of the industry.

Results of Reorganisation.

Between 1932 and 1934 the average price of pork increased from 50/6 to 59/1. Instead of fluctuating according to the quantity of pigs offered at local markets, prices were now linked according to formula with the price of feeding stuffs on the one hand and the realised price of bacon and hams on the other. Under the Agricultural Marketing Act (Northern Ireland), 1933, a system of grading pork carcases was introduced and from that time prices of pork varied according to the weight and quality of the carcase offered for sale.

No better witness of the benefits of stable prices and payment for quality can be found than in the increased production of pigs which has occurred since 1932. The pig population has increased from 220,000 in 1932 to 271,000 in 1933 and 380,000 in 1934. Further increases have occurred in 1935 and 1936 to 458,000 and 521,000 respectively. The output in 1934 has amounted to 439,250 and in 1935 to 613,000,, and in 1936 to 719,000, as compared with an average for the years 1927/32 of 230,660. The total value of the output of pigs from Northern Ireland farms increased correspondingly from £1,071,000 in 1932 £2,100,000 in 1934 and to £2,800,000 in 1935, and to £3,210,000 in 1936 ; at the present time pig production is the most valuable branch of the live stock industry in Northern Ireland. It may be seen then that the possibilities of increased production

envisaged in the Ministry's Statistical Report of 1925 have been realised. The number of pigs per 1,000 acres of crops and grass in Northern Ireland was 154 in 1934, 185 in 1935, and 211 in 1936, as compared with 133, 153 and 153 in England and Wales.

These extraordinary results have been achieved in spite of a number of difficulties, some of which have not been completely overcome. Some of these problems and the way in which they were met are described in Appendix I. One of these, however, deserves description here as it has been the occasion for an important development in the Northern Ireland bacon industry.

Prior to 1931, as has been mentioned, Northern Ireland pig production was inadequate to meet the needs of the bacon factories in this country, but by 1934, when the licensed factories absorbed 414,000 pigs, production was in the existing state of the market in excess of bacon curers' requirements. The surplus had to be shipped to Great Britain and used there in the production of pig products. Hence while there was a net import of 60,000 live pigs and 95,000 cwts. of pork in 1932, there was a net *export* of 13,000 live pigs in 1934, and the net import of pork had decreased to 8,000 cwts. (This tendency was even more marked in 1935, when there was a net export of 65,000 live pigs and 22,000 cwts of pork). Transport charges, loss of weight, or damage caused by the removal of pigs to Great Britain involves a cost of roughly 10/- per pig, and it would clearly be in the interest of pig producers and of the Northern Ireland community as a whole if all Northern Ireland pigs could be cured in this country.

Northern Ireland bacon factories have not been able, however, to absorb the increased output of pigs in this country because the demand for the kind of roll bacon and ham in which these factories specialise has not expanded in proportion to the increase in the pig population. While it is true that the total output of bacon factories in Northern Ireland increased between 1929 and 1933 an examination of the figures relating to the net export of bacon and hams shows a decline from 245,147 cwts. to 171,070 cwts. in those years. It appeared that demand at home was being maintained, but that the market in Great Britain was contracting. While then quantitative regulation offered very considerable possibilities for expansion in bacon production in Northern Ireland it became apparent that the extent to which the Northern Ireland bacon industry could enjoy these advantages depended partly on its ability to produce the kind of bacon which the British consumer required.

The kind of bacon favoured by the rapidly increasing population in the south and south-east of England is of the Wiltshire

cure—a milder and leaner type than roll bacon. For its production a light pig is required of the York rather than the Ulster type, and curing factories with abbatoirs attached are necessary to carry out efficiently the Wiltshire process of curing. The Ministry has encouraged the production of the kind of pig which is suited to Wiltshire curing, and both Ministry and Pigs Marketing Board have done their utmost to encourage the establishment of Wiltshire bacon factories in Northern Ireland. For this purpose they have a useful instrument in the power of the Ministry to licence new bacon factories under the Agricultural Produce (Meat Regulation) Act, of 1930. In its advisory capacity the Pig Industry Council is disposed to recommend the extension of licences for the curing of Wiltshire bacon, provided, that is to say, that sufficient pigs of the right type can be obtained from producers for this purpose. As a result of this policy two Wiltshire bacon factories of considerable size were set up in Northern Ireland in 1935.

MILK AND MILK PRODUCTS ACT (NORTHERN IRELAND), 1934.

The Milk Marketing Scheme did not come into operation like the Pigs Marketing Scheme under the Agricultural Marketing Act (Northern Ireland), 1935, but under a special Act, the Milk and Milk Products Act, which was passed for the purpose in the early summer of 1934. Though, however, the Milk Scheme is not, strictly speaking, a Scheme within the meaning of the Agricultural Marketing Act (Northern Ireland), 1933, in intention it is comparable with the Pigs Marketing Scheme and it is proposed in this section to treat it in broadly the same way as the latter, dealing first with conditions in the industry prior to 1934, and secondly with the objects and implications of the Scheme.

As with other agricultural products a serious fall in the price level of milk and milk products occurred between 1925 and 1933. This may be illustrated from a comparison of the price of milk sold to creameries for manufacture and of farm butter in 1925 with the price of these products in 1931. The price of milk sold to creameries fell between 1925 and 1933 from 7.3d. to 3.6d. and the average price of farm butter fell from 1/9d. per pound in 1925 to 1/0½ in 1931, 11¾d. per lb. in 1932 and 10¼d. in 1933. While there is very little accurate information as to the movement of wholesale milk prices in Northern Ireland during these years, there is evidence that they fell with manufacturing milk prices.

It is hardly necessary here to dwell on the inefficiency of marketing, the poor bargaining position of the producer and the

instability of prices within the home market. These characteristics which milk marketing had in common with the marketing of pigs and other products have been dealt with implicitly elsewhere in this Report.

It is desirable, however, to describe a peculiar characteristic of milk production to which the major problem of reorganisation was due, namely, that substantially more milk mainly of a seasonal character is produced in Northern Ireland than can be sold for liquid consumption and the surplus has to be disposed of in the manufacture of milk products at a price considerably below that received for liquid milk.

The liquid milk producer used to be able to command this higher price because he received natural protection through the proximity of his farm to the liquid market. The perishable nature of his product and the transport costs involved in bringing milk from outlying districts into the urban market prohibited competition. The manufacturing milk producer, on the other hand, was forced to sell his milk at sufficiently low prices to enable milk products manufactured at home to compete with cheap foreign and dominion imports.

The liquid milk producer, however, never enjoyed complete protection. The disparity between liquid milk prices could never exceed the point at which the manufacturing milk producer would find it profitable to pay the costs of transport and send his milk to the urban market. Consequently, not only did a fall in the price of manufacturing milk induce a fall in the price of liquid milk but the presence of a large quantity of surplus milk, which it was always possible to bring on to the urban market, effectively undermined the bargaining position of the regular producer of liquid milk and caused unstable prices within the liquid market. Hence any attempt on the part of producers of liquid milk to raise by agreement the price at which they were prepared to sell their product had little chance of success.

Accordingly, the two outstanding factors in the milk industry in 1933 were the fall in the general price level of milk and milk products due to greatly increased world production of milk products and the ability of foreign manufacturers to sell their products in the free British market. Secondly, the presence of a surplus of milk within the home market which could be sold on the liquid milk market at a price calculated to defeat producers' co-operation for the stabilisation and raising of prices.

The price of milk in the United Kingdom could not be raised through the restriction of imports of milk products. Quantitative regulation of supplies from Empire sources, which accounted for 50 per cent. of the imports of milk products in 1931, was

precluded by the Ottawa Agreements and the regulation of foreign supplies alone would merely have given Dominion producers a greater share in the market without benefit to the home producer. This actually was the effect of the specific duty of 15/– per cwt. which was imposed under the Ottawa Agreement Act of 1932 on all imports of butter from foreign sources.

The price of manufacturing milk in Northern Ireland is influenced mainly by that of Northern Ireland butter which in its turn is affected by the competition of Irish Free State imports. Under the Irish Free State (Special Duties) Act, 1933, a duty of 40 per cent. *ad valorem* was placed on imports of butter from that country, but the provision by the Irish Free State Government of a bounty on exports of butter enabled exporters to continue to sell their product at an uneconomic price in Northern Ireland.

It appeared that little protection could be afforded for the time being to producers of manufacturing milk and indirectly to liquid milk producers, but there remained the possibility of insulating the liquid milk market and preventing the surplus of manufacturing milk from jeopardising the stability of prices. Partly with this end in view, the Milk and Milk Products Act was passed in December, 1934, and it is proposed to deal first with the way in which it treated the problem of surplus milk.

The Northern Ireland Milk Marketing Scheme.

It is worthy of note that under the Milk Marketing Scheme for England and Wales where roughly 30 per cent. of the milk is surplus to requirements of the liquid milk market, what is known as a "pooling" system has been adopted following the recommendations of the Reorganisation Commission for Milk, 1932. All milk sales are now made through the Milk Marketing Board which sells the milk at prices varying according to the use to which it is put. Receipts from milk sales in each of eleven regions are pooled by the Board and after allowance has been made for administrative costs and other small charges, are divided out equally over the gallonage supplied. Returns on milk for manufacture and milk for human consumption are thus brought to the same level somewhere between the prices realised for each in the market.

In Northern Ireland, where so large a proportion as 70 per cent. of the milk production is used for manufacture at prices considerably lower than those offered for liquid milk, the pooling system would be manifestly unfair to the producer who caters almost exclusively for the liquid milk market. Consequently, under the Milk and Milk Products Act a scheme was adopted in

which the bulk of the milk which is normally produced for manufacture is excluded from the liquid milk market and receives a lower rate of return than milk sold in the latter. In recognition of this, the Milk and Milk Products Act provides for a guaranteed average price for milk sold to creameries for manufacture.

At the same time there was evident need of assistance to the producer of milk for manufacture. It must be recognised that the ability of producers in Northern Ireland to sell their milk to creameries is of relatively far greater benefit than would be supposed from a mere comparison of manufacturing and liquid milk prices. Not only does the supplier receive cash for his production, but the separated milk, which may be used as a feeding stuff for calves and young pigs, is also returned to him. The creameries have, then, an organic place in the rural economy of Northern Ireland.

The Milk and Milk Products Act authorises the sale in Northern Ireland of four grades of milk—A, B, C, and D—and specifies the requirements of each of the first three grades (See Appendix (1)). Grade D is the description given to all milk which is not graded A, B or C. Only grades A, B, and C may be sold on the liquid milk market, and any producer who wishes to sell these grades of milk must hold a licence, to qualify for which his premises and equipment must be of a certain standard. The Joint Milk Council, set up under the Act and composed of 7 representatives of producers, 4 of distributors, 3 of consumers, together with 3 members nominated by the Minister of Agriculture, has among other functions the power to fix wholesale and retail prices for these three grades. If retail prices are fixed, however, they are subject to the approval of the Ministry of Agriculture.

It was to be expected that a certain quantity of Grades A, B, and C milk would have to be sold to creameries, particularly in the summer months. Provision is, therefore, made under the Scheme for compensation to producers of this surplus in the form of bonus payments not exceeding 2d. per gallon on Grades A and B, and 1d. per gallon on Grade C. These payments are made from a Milk Fund set up under the Act out of the proceeds of licence fees required of distributors, sellers of butter and margarine, and milk producers holding licences for the sale of Grades A, B and C milk. In the case of producers these licence fees amounted to an initial payment of 2/6 and further payments not exceeding 1/10th of a penny per gallon on Grade A milk, 2d. per gallon on Grade B, and 3d. per gallon on Grade C.* Thus the milk producer, the distributor, and the butter and margarine

* These fees have been fixed since the 12th May, 1935, at 1/10th of a penny per gallon on Grade A milk, ¼th of a penny on Grade B milk, and 1¾d. per gallon on Grade C milk.

trader, are all held partly liable for compensating the producer of Grade A, B, or C. who is unable to dispose of his milk on the liquid market.

Grade D milk can only be sold for manufacture to creameries, manufactured on the farm, or consumed by the farmer and his household and for this grade of milk the Joint Milk Council does not fix prices. For such milk delivered to creameries, together with any Grades A, B or C milk disposed of in that way an average price is guaranteed of 6d. per gallon in winter and 5d. in summer. The equalisation payments necessary to raise the average price of milk sold to creameries to this level are also met out of the Milk Fund, and for this purpose a special grant, which was not to exceed £200,000 in 1934/35 has been made to the Fund under the Milk Act of the Imperial Parliament, 1934.

The method of allocating returns to the various classes of producer has been dealt with at some length as this is the crux of the Northern Ireland Milk Scheme. While the principles of payment for quality and the exclusion of inferior quality milk from the liquid market have proved a means of dealing with surplus milk and of preserving on an equitable basis the relatively higher profits on fresh milk sales to the better class of milk producers it is hoped that their incorporation in the Scheme will also increase the human consumption of milk. Notwithstanding the general agreement that milk is a food stuff of great nutritional value, the consumption of fresh milk in this country remains at a low level in comparison with other countries, owing partly to the widespread fear of infection. The exclusion of all but milk which has been produced from clean, healthy cows and has passed certain tests for cleanliness and keeping quality, varying in stringency from Grade C to Grade A, is designed to break down this prejudice and to provide milk which is, as far as possible, free from contamination.

In accordance with this vitally important object of securing a clean milk supply and encouraging consumption, the Milk and Milk Products Act requires certain services of the distributor varying according to the grade which he distributes. Any person who wishes to distribute milk must now hold a licence, and before such a licence is granted the premises of the distributor are examined by an Inspector of the Ministry and must be adequate in respect of space, ventilation and equipment. Since the retail price level is an important factor in determining the quantity of milk consumed the Joint Milk Council has been given the power to fix minimum retail prices subject to the approval of the Ministry of Agriculture. The consumer is safeguarded by this latter proviso and by the presence of representatives of consumers on the Council from any undue increase in the

retail price of milk. In practice, the Council has borne constantly in mind the need of fixing a retail price which does not prevent the poorest consumer from obtaining sufficient milk for his needs. This it has been able to do by fixing a scale of prices varying according to the quality of the milk and the service afforded in its distribution. Thus, for Grade A milk which is of the highest quality and must be bottled, the consumer has to pay the highest price. For Grade C milk, which is of a lower quality and may be sold loose, the consumer pays a lower price. This may be seen from the following table in which is shown the retail price of each grade of milk sold in Belfast—the area of highest retail prices in Northern Ireland—during the first period of price determination, December 16th, 1934, to May 12th, 1935. The corresponding wholesale prices are also shown in order to indicate the differences between the margins allocated to the distributor on the sale of each grade.

Grade.	Wholesale Price.	Retail Price (min.)	Distributive Margin.
	s. d.	s. d.	d.
A	1 $4\frac{1}{2}$	2 2	$9\frac{1}{2}$
B	1 $2\frac{1}{2}$	2 0	$9\frac{1}{2}$
C	1 $2\frac{1}{2}$	1 10	$7\frac{1}{2}$

It should not be inferred from this table that 1/10d. per gallon is the lowest price at which consumers can purchase milk in Belfast. The Joint Milk Council has provided in its first and subsequent determinations that any grade of milk may be sold at 4d. less than the prices quoted above to consumers who are prepared to collect it at the shop or at the producer's door. Thus milk in the first period of price determination could be obtained in Belfast at as little as $2\frac{1}{4}$d. a pint if the consumer was willing to receive a minimum service.

An important consequence of the Milk and Milk Products Act was the reform of the Veterinary Services in Northern Ireland. Prior to the Act the supervision of dairies and cowsheds rested in Northern Ireland, as in England, with the part time Veterinary Officers of Local Authorities. This system, which, among other defects, placed veterinary officers in the position of serving two masters whose interests did not always appear to be compatible, could hardly have been adequate to sustain the comprehensive veterinary functions required by the Milk Scheme. Thus prior to the inception of the Scheme the agreement and co-operation of the Local Authorities was secured in the transference of the public Veterinary Services to the control of the Ministry of Agriculture. Not only does this reform enable Veterinary Officers to carry out their duties with far more assurance than in

the past, but it also secures that the regulations affecting herds, dairies and cowsheds are enforced uniformly throughout the country.

WHEAT AND CATTLE SUBSIDIES.

In the period under review three measures were passed by the Imperial Parliament which have been of direct benefit to Northern Ireland producers. Of these the Milk Act, 1934, under which a grant was made from the Imperial Exchequer for the purpose of raising the average price of milk supplied to creameries in Northern Ireland to 5d. per gallon in summer and 6d. per gallon in winter has already been dealt with in connection with the Milk and Milk Products Act (Northern Ireland), 1934. The Wheat Act, 1932, and the Cattle Industry (Emergency Provisions) Act, 1934, remain to be briefly described here.

Wheat Act, 1932.

The objects of the Wheat Act, 1932, are to guarantee a standard price to growers of millable wheat in the United Kingdom and to secure a market for their produce. The importance of the Act to United Kingdom farmers as a whole may be seen from the fact that the acreage under Wheat in the United Kingdom in 1927 was 1,708,509 or 5.2 per cent. of the total area under crops and pasture, but of this acreage only 5,952 were under wheat in Northern Ireland representing 0.24 per cent. of the total area under crops and pasture in the six counties. Between 1927 and 1932 the average price of wheat in England and Wales fell from 11/6 per cwt. to 5/11, and the acreage under wheat in the United Kingdom fell by 21 per cent.

In order to maintain British wheat production it was decided to introduce the Wheat Act, 1932.

The Act provides that a standard price of 10/– per cwt. less administrative expenses shall be paid to growers of millable wheat in the United Kingdom in respect of an output not exceeding 27,000,000 cwts. in any cereal year (the cereal year beginning on the 1st August and ending on 31st July). If the output exceeds this maximum the price per cwt. received by growers is proportionately reduced. In order to make up the difference or " price deficit " between the ascertained average price of millable wheat in any cereal year and the standard price, deficiency payments are made to growers out of a Wheat Fund provided for under the Act. The Fund is filled from the proceeds of a levy known as a " quota payment " which is paid by millers and importers on every cwt. of flour imported into or milled in the United Kingdom and the amount of the " quota payment " per cwt. is determined by dividing the total amount of money required for deficiency payments in any year by the imports of flour and the quantity of flour milled in the United Kingdom in that year.

The Act provides for the setting up of a Commission to administer the Wheat Fund and to advise the Minister in matters relating to the production and marketing of wheat consisting of 19 members and representing millers, farmers, bakers and consumers. It also provides for a Flour Corporation with the function of purchasing the unsold home-grown wheat of the year not exceeding 12½ per cent. of the anticipated supply.

The Wheat Act has had the effect of increasing the acreage under wheat in the United Kingdom from 1,343,276 acres in 1932, to 1,882,143 in 1935. In Northern Ireland alone the acreage under wheat increased from 3,260 in 1932 to 9,067 acres in 1935. Owing to the increase in production of millable wheat beyond the maximum output of 27,000,000 cwts. the price per cwt. received by growers has, in the last two cereal years 1934/35 and 1935/36, been somewhat less than 10/- per cwt. In 1934/35 the market price, plus deficiency payment, amounted to 8/8½ and in 1935/36 to 9/1½d. Altogether in the four cereal years beginning July, 1932, and ending July, 1936, Northern Ireland growers received £82,365 : 16 : 4 in respect of deficiency payments.

The Cattle Industry (Emergency Provisions) Act, 1934.

The Cattle Industry (Emergency Provisions) Act, 1934, was a temporary measure designed to assist the cattle industry pending the formulation of a more lasting policy for the development of cattle production in the United Kingdom. Between 1929 and 1934, the price per live cwt. of store cattle sold at fairs in Northern Ireland fell from 38/9d. to 29/6d., and that of fat cattle from 41/9d. to 31/9d. A similar price fall occurred in Great Britain.

Owing to trade agreements with the Argentine and the Dominions from which the bulk of the United Kingdom supplies are obtained, H.M. Government in the United Kingdom was unable to impose a sufficient degree of quantitative regulation or of import duties to raise the price of cattle to a remunerative level, and as with milk products, the supply of which was governed by similar conditions, it had recourse, failing any other immediate remedy, to a direct subsidy to the industry.

Under the Cattle Industry (Emergency Provisions) Act payments to producers are made out of a Cattle Fund, subject to certain conditions, in respect of steers, heifers and cow-heifers sold by them in a finished condition. These payments amount to 5/- per live cwt. and 9/4d. per cwt. dressed carcase weight.

The conditions of payment are that the cattle have been certified by certifying authorities to be of the standard prescribed in the regulations, and, if imported, to have been in the United Kingdom for at least three months prior to sale.

To administer the Act, a Cattle Committee is set up consisting of seven members appointed by the Ministers concerned.

This Ministry has placed its veterinary staff at the disposal of the Cattle Committee for purposes of certifying cattle on which subsidy is claimed in Northern Ireland.

Up to the end of August, 1936, producers had received £505,248 in respect of 241,796 cattle finished in Northern Ireland.

Finance.

Before proceeding to an account of the Ministry's finance during the period under review, it should be observed that the expansion of the Ministry's staff arising out of the increase in functions described above has involved no additional cost to the Exchequer. While the total cost of agricultural services has increased since 1933-34, the additional cost has been met out of funds filled mainly by contributions from the sections of the agricultural and subsidiary industries to which these measures apply.

The figures given below relate only to the period 1931-34, during which the effect of the cost of the greater part of marketing legislation had not been felt.

Since then, however, amounts shown under "contributions from other sources" have increased correspondingly with expenditure on agricultural services.

A broader classification of expenditure on agricultural and allied services than that which appears in the statutory accounts of the Ministry shows the following result as regards the financial years 1931–34 :—

	1931/32	1932/33	1933/34
	£	£	£
Agricultural Research and Advisory Work	16,591	17,837	18,398
Agricultural Education (Net)	37,669	37,406	38,307
Live Stock Schemes, including Poultry (Net)	35,554	34,082	33,267
Diseases of Animals Acts ..	42,499	28,937	28,695
Marketing of Agricultural Produce	16,947	18,940	20,255
Grants for Drainage and other Land Improvements ..	5,432	4,680	4,815
Miscellaneous Agricultural Services, including flax and potato seed selection and propagation schemes and control of potato disease (Net)	9,695	10,328	10,699
Afforestation (Net)	18,872	13,639	17,998
Ordnance Survey (Net) ..	9,143	6,803	–
General Expenses	44,609	44,146	45,553
Totals ..	£237,011	£216,798	£217,987

The figures quoted do not, of course, take cognisance of assistance given to the agricultural community in Northern Ireland in the way of grants in relief of rates on agricultural land, in respect of land purchase, or by way of subsidy to wheat growers under the Wheat Act, 1932, or to producers of fat cattle under the Cattle Industry (Emergency Provisions) Act, 1934. The financial administration of these schemes is outside the functions of the Ministry. Expenditure on research into animal nutrition problems by the Trustees of the Agricultural Research Institute at Hillsborough is likewise excluded, save in so far as concerns the grant received from the Empire Marketing Board and issued through the Ministry for special research in poultry nutrition. The original Endowment Fund and capital cost of the Institute were, of course, provided by grants from the Ministry.

The greater part of the expenditure shown in the table given above was a final charge on the Northern Ireland Exchequer.

Contributions from other sources were:—

	1931/32 £	1932/33 £	1933/34 £
From Local Authorities:			
(*a*) Sums levied by the several Co. Councils under Section 78 (1) of the Education Act (Northern Ireland), 1923, representing 1d. in the pound on local rates and expended through the County Committees of Agriculture on approved agricultural schemes	10,707	10,729	10,727
(*b*) Sums applied directly by the County Councils towards costs arising under the Diseases of Animals Acts	3,913	4,135	4,523
(*c*) Sums levied on the Counties and County Boroughs for the purpose of the General Cattle Diseases (Northern Ireland) Fund	10,859	5,466	5,484
From the Agricultural Development Fund in respect of live stock schemes	7,713	7,085	694
From the Empire Marketing Fund in respect of cost of special inquiries into marketing problems, farm costings and poultry nutrition ..	1,871	2,235	1,213

	1931/32 £	1932/33 £	1933/34 £
From the Board of Trade in respect of cost of staff employed for the purpose of the Cattle (Import Regulation) Order, 1933, regulating the importation of cattle from the Irish Free State	–	–	844
From the Pigs Marketing Board in respect of cost of staff lent to the Board, conduct of elections, etc.	–	–	560
From the Government Loans Fund in respect of cost of administration of Agricultural Development Loan services	125	120	100
Fees paid by farmers and others for various services	15,088	17,105	16,892

The annual assessment as at (*c*) has been at the rate of one farthing in the pound since the Fund was created in 1926, but as a result of abnormal demands upon the Fund, due to the outbreak of foot-and-mouth disease in 1931–32, an assessment at double the ordinary rate became necessary in that year.

It should here be mentioned that under the Diseases of Animals (Dairy Cattle) Act (Northern Ireland), 1934, power was taken to increase the annual levy for the General Cattle Diseases Fund to the amount required to defray additional expenditure which has fallen on the Fund from the centralisation in the Ministry of certain services hitherto devolved on Local Authorities. These services include the administration of the Bovine Tuberculosis Order, and of the Dairies, Cowsheds and Milkshops Order, 1908, which work has been co-ordinated with other functions in regard to milk supplies to be undertaken by the Ministry under the Milk and Milk Products Act, 1934. It is anticipated that the poundage of the additional rate required will not exceed one farthing, making a total annual rate of one halfpenny.

Following the close of the financial year 1932-33 a balance of approximately £694 remained unexpended of the capital sum of £40,000, comprising the original endowment of the Agricultural Development Fund. In order to secure the continuance of the Live Stock Development Schemes which had been financed from the Fund, the Ministry in 1933/34 obtained sanction for the transfer to the Vote of the cost of the service, approximating to £7,000 per annum exclusive of poultry schemes, provision for which was transferred from the Fund to the Vote in 1931/32.

Grants from the Empire Marketing Board ceased with the dissolution of the Board in October, 1933. Provision has,

however, been made for the continuation of the Farm Costings Inquiry by means of a grant from the Northern Ireland Exchequer. Similarly, the grant formerly given by the Board for research into poultry nutrition has been replaced by Exchequer grants at the rate of £1,350 per annum for the years 1933/36.

No expenditure in respect of Surveys is shown for the year 1933/34, the service having been transferred to the Ministry of Finance in that year for reasons of administrative convenience associated with the work of property revaluation.

During the period under review the Ministry was successful in securing an Exchequer grant of £1,850, to be expended over a period of approximately 3 years for the purpose of experiments to test the efficacy of the Spahlinger bovine anti-tubercular vaccine. The results so far obtained are referred to elsewhere in this Report.

The finance of the Milk Fund has been dealt with in the account of the Milk Marketing Scheme, but it should be mentioned here that in addition to other charges there has been chargeable to the Fund the cost of administration of the Milk and Milk Products Act, including the expenses of the Joint Milk Council and cost of staff employed on the inspection of the premises and records of creameries and licence-holders generally.

In August, 1934, the Ministry, acting as agent for the Cattle Committee appointed by the Imperial Ministry of Agriculture and Fisheries, undertook, on a repayment basis, the work of certification of cattle presented at sales and markets in Northern Ireland for the purpose of the subsidy on fat cattle which has been provided by the Imperial Government under the Cattle Industry (Emergency Provisions) Act, 1934. Allied to some extent with the work of certification is the duty of classification of cattle imported into Northern Ireland from the Irish Free State, undertaken by the Ministry on behalf of the Board of Trade in December, 1933, for the purpose of the Cattle (Import Regulation) Order, 1933, which restricts the numbers of cattle so imported. The cost of enforcement of the Order in Northern Ireland is recoverable from the Board of Trade.

The establishment of the Pig Industry Fund does not strictly fall within the period covered by this Report, but it is convenient to refer to it here. The creation of a Fund under that title, to be controlled by the Ministry, is provided for in the Agricultural Marketing (Pig Industry) Act, 1934, which directs the payment into the Fund of all sums received under the Act, other than contributions or levies provided to be collected by the Ministry on behalf of the Pigs Marketing Board. Expenses incurred by the Ministry in giving effect to the Act are to be met from the Fund, including the expenses of the Pig Industry Council. The revenue of the Fund may further be charged with contributions

towards the cost of schemes for the eradication of diseases of pigs and of education and research into problems concerned with the production and marketing of pigs and bacon.

In addition to monies expended by way of grants, 69 loans, totalling £3,567 in all, were issued direct by the Ministry during the three financial years ended 31st March, 1934, under Schemes described in previous Reports. Particulars of these loans and of the objects to which they were applied are given in the appendices. The rates of interest chargeable on new issues were reduced during the period in accordance with the general tendency to cheaper money rates. In connection with the scheme of loans for erection of fencing in mountainous districts, it is of interest to record that in the eight years which have elapsed since the introduction of the scheme, some 40 miles of wire fencing have been erected, involving 53 loans amounting to £3,538. The facilities for the enclosure of mountain grazing which the scheme offers continue to be widely utilised.

Coincident with the introduction of the Milk Scheme a demand has arisen for the provision of credit facilities for purchase of equipment, such as to enable milk producers and distributors to satisfy the conditions precedent to the grant of licences. To meet this demand the Ministry has undertaken to issue advances from the Government Loans Fund at 3 per cent. interest, secured on promissory note and repayable over a period of 4 years. For loans under £50 the signature of the applicant and one approved surety will be sufficient, a second surety being necessary when the loan exceeds £50.

Apart from loans issued directly, guarantees to the amount of £42,508, covering 1,192 separate loans, were undertaken by the Ministry during the three years ended 31st September, 1934, in respect of the principal of loans issued by banks to farmers for the purchase of live stock, seeds and fertilisers, making a total of £48,536 outstanding in respect of guarantees up to that date.

The discount rate applicable to these guaranteed loans in recent years has been 4½ per cent. but in order to provide cheaper credit for farmers the Ministry as from the 1st January, 1933, arranged to pay out of an Exchequer grant a discount contribution at the rate of 1½ per cent. on the total loans issued under guarantee, thus reducing to 3 per cent. the amount payable to the banks by the farmer borrowers. This reduced rate of discount was made to apply also to outstanding instalments of loans issued in previous years.

The total amount written-off as irrecoverable on foot of dishonoured bills redeemed by the Ministry under guarantee increased from £405 at the end of 1931 to £532 at the close of the year 1934, representing approximately a third of one per cent. of the total sum guaranteed since the inception of the first

scheme in 1925. Accounts of transactions in respect of loan guarantees are given in the appendices.

As from 1st January, 1935, the Government has decided to discontinue the system whereby live stock, seeds and fertiliser loans are issued by Banks under Government guarantee. Loans for the purposes mentioned will for the future be issued from the Government Loans Fund on the same security as heretofore, viz., a Promissory Note given by the applicant and two approved sureties. The rate of interest payable by the farmer will be 3 per cent. The scheme contemplates the redemption by the Government Loans Fund of all sums outstanding under guarantee.

The scheme for extension of employment in rural areas through the medium of land improvement schemes has continued in force. Some 561 schemes reached completion in the three years ended 31st March, 1934, grants to the total of £12,991 being issued by the Ministry. An estimated total acreage of 20,000 has been improved by drainage and reclamation works since the inception of the scheme in 1929, up to 31st March, 1934, apart from the construction or improvement of farm roads which the scheme has facilitated. Steps have been taken by the Ministry to ensure that, other things being equal, preference would be given by the Employment Exchanges to genuine agricultural labourers in the assignment of unemployed men for work on agricultural improvement schemes, rather than to men whose normal avocations are non-agricultural.

AGRICULTURAL EDUCATION.

The system of agricultural education outlined in previous Reports has been continued.

Winter Agricultural Classes.

During the period under review classes conducted by Agricultural Instructors were held at 60 centres in the six counties and were attended by 979 students. Of this number 471, whose attendance was regular and whose progress was satisfactory, qualified for the award of certificates.

Details of the centres of instruction and the number of students will be found in Appendix III.

Greenmount Agricultural and Horticultural College.

During the three years covered by this report one hundred and thirty-three scholarships covering tuition, board, residence and ordinary medical attendance were offered by the various County Committees of Agriculture, in connection with the three sessions at Greenmount Agricultural and Horticultural College, Muckamore. One hundred and sixteen scholarships were actually awarded and, in addition, a scholarship payable out of the Anne Hall Bequest Fund was awarded in 1933/34. Eight pupils

entered the College as fee-paying students. Five of the scholarship holders took out the course in Horticulture.

Agricultural Faculty of the Queen's University.

In connection with the advanced course of University training in agricultural science, provided by the Ministry at the Faculty of Agriculture of the above-mentioned University, four scholarships, each tenable for four years, were awarded in each of the three years, as a result of examinations held in October of each year. Fifty-two candidates in all presented themselves for these examinations. The scholarships awarded in 1931 were each of the value of £100 per annum, and those awarded in the following years were of the value of £95 per annum. Five additional scholarships, provided from the Gibson Trust Fund, were awarded from the same examinations and one scholarship, provided by the Anne Hall Bequest Fund, was awarded as a result of the 1933 examination. During the period under review the following numbers of students were enrolled in the Faculty :—

	1931–32.	1932–33.	1933–34.
Holders of Ministry's Scholarships	20	19	17
Holders of Gibson Trust Fund Scholarships	4	5	5
Holders of Anne Hall Bequest Fund Scholarships	1	–	1
Holders of Regional Educational Committee Scholarships ..	1	1	–
Fee paying students	10	10	7
Total	36	35	30

Horticultural Scholarships.

The holder of the scholarship in Horticulture awarded in 1930 proceeded for the second year of his scholarship course to the Queen's University and in the month of July, 1932, was, by special arrangement with the Department of Agriculture in the Irish Free State, sent to the Botanic Gardens, Dublin, for a period of practical work. The student's third year was spent at the Hertfordshire Institute of Agriculture, Oaklands, St. Albans, and his final year at the farm of Messrs. Seabrook and Son, Limited, Chelmsford.

The holder of the scholarship awarded in 1931 is pursuing instruction on similar lines and is now in his final year.

No scholarships were offered in 1932 or in 1934, but in September, 1933, one was awarded. Full details in regard to these scholarships will be found in Appendix III. of the Ministry of Agriculture's Annual Report, 1929–3.

Creamery Scholarships.

Two scholarships in Creamery Management, each of the value of £98, were awarded in each of the years 1931, 1932, and 1933, but none in 1934. The scholarship course embraces two periods of practical training at the University College, Cork, extending from October to March in successive winter terms with an intervening period of 20 weeks practical training, half of which is normally taken out at the Experimental Creamery attached to the College and half at a selected creamery in Northern Ireland.

Ulster Dairy School and North-West School.

Courses of training for girls in Poultry-keeping, Buttermaking and Rural Housewifery are provided at the North-West School, Strabane, and the Ulster Dairy School, Cookstown, four terms being held at each school annually.

Two hundred and sixty-two places were filled at the North-West School during the three years under review by the holders of scholarships awarded by the County Committees of Agriculture. Eighty-one of these students proceeded to the Ulster Dairy School for additional training of a more advanced character.

Two hundred and thirty-five pupils passed through the Ulster Dairy School, and after a three terms' course one hundred and thirty-four of these qualified for certificates in all subjects.

During the period covered by this Report thirteen specially selected pupils from the Ulster Dairy School who were awarded creamery apprenticeships took out the prescribed course of training, which extends over twenty weeks, at approved creameries, and were on the conclusion of their training awarded the Ministry's certificate of competency in butter-making. During the course of training at the approved creamery these pupils also receive a maintenance allowance.

The Ministry continued its arrangements whereby in return for small annual grants two poultry-keepers who work on commercial and up-to-date lines undertake to furnish particulars in connection with the working of their farms, and to train selected pupils from the Ulster Dairy School who desire to qualify as instructors or teachers in poultry-keeping. The course of training on these approved farms which follows an extensive course of study at the Ulster Dairy School, is of twelve months' duration and in order to ensure that the pupils will have as wide and as varied experience as possible of the practical aspect of poultry-keeping, they are usually required to take out six months of the practical training at each farm. During this period the pupils receive a maintenance allowance. Eight such pupils completed their courses and qualified as instructors during the period under review.

Instruction in Agriculture.

Ten instructors and sixteen overseers are employed by the various County Committees of Agriculture in connection with the scheme of instruction in agriculture and these officers by means of visits, classes, lectures on subjects of vital importance to the farming community, demonstrations and experiments carried on their work for the improvement of agriculture and agricultural conditions generally in Northern Ireland. Tables which show in detail the work carried out by these officers during the period under review will be found in Appendix III. Summaries showing the results of field and livestock experiments carried out by the various instructors may be obtained from these officers, whose names and addresses also appear in Appendix III.

Instruction in Poultry-Keeping.

The poultry-keeping industry is one which has made rapid strides in Northern Ireland during the past decade and this improvement must, to a large extent, be attributed to the efforts of the ten instructors in poultry-keeping whom the County Committee of Agriculture employ in connection with the scheme of instruction in poultry-keeping.

One of the most important features of their work is the supervision of poultry stations, established under the terms of the Ministry's poultry stations scheme, from which farmers and others obtain sittings of eggs from blood-tested stock at reasonable prices. Holders of such stations who comply with the provisions of the scheme qualify for the award of premiums, while those who undertake to trapnest their pullets during the winter months and thus provide birds of proved laying ability for the breeding pens in the following season are awarded, in addition, small special premiums.

The fact that the instructors have for the past few years been unable to cope with the demand in connection with the blood sampling of poultry during the testing season, is ample proof that poultry-keepers are now fully alive to the efficacy of blood testing as a means of preventing the spread of Bacillary White Diarrhoea. All the County Committees of Agriculture now, therefore, allocate funds for the employment of temporary blood sampling officers to assist the instructors in the work of blood sampling poultry and ten of these assistants were employed for varying periods during the blood sampling season in each of the past three years.

Instruction in Butter-Making.

This scheme operates only in Counties Antrim, Armagh, Down and Londonderry and the work in connection with it is carried

out by the instructors in poultry-keeping. Detailed particulars of the work carried out by the instructors under this scheme and the scheme of instruction in poultry-keeping will be found in Appendix III.

Instruction in Horticulture and Bee-Keeping.

In connection with this scheme the County Committees of Agriculture employ nine instructors who, in addition to conducting experiments and demonstrations, also organise exhibits at the various Agricultural and Horticultural Shows. Practical demonstrations and advice in connection with the correct methods of grading and packing fruit to conform with the provisions of the Marketing of Fruit Act, 1931, now constitute an important part of the work of the instructors, who also act as judges for the apple orchard competitions held under the auspices of the Ulster Horticultural Society and for the competitions under the Cottage and Garden Prize Scheme which are now held in Counties Antrim, Down and Fermanagh. Detailed tables showing the number of visits paid, experiments and demonstrations laid down, etc., by the instructors during the past three years will be found in Appendix III.

Grants to Shows.

A table setting out the number of shows held, the amount expended in grants by the County Committees of Agriculture, etc., during the past three years in accordance with the terms of the scheme of grants to agricultural, etc., societies will be found in Appendix III. This scheme is designed to assist societies established for the purpose of holding agricultural and horticultural shows, ploughing matches, etc. The Ministry also continued its practice of affording assistance to County Committees, in staging educational exhibits at the more important shows in the various counties. An elaborate and successful exhibit was staged annually by the Ministry at the principal show held in Northern Ireland, viz., the Royal Ulster Agricultural Society's Summer Show.

Exhibits at Cross-Channel Shows.

With the object of bringing to the notice of Cross-channel merchants the merits of Northern Ireland potatoes the Ministry staged at Smithfield Club Show, London, in each of the years 1932, 1933 and 1934 a comprehensive exhibit of seed and ware potatoes. For the show held in 1934 the Ministry published a leaflet which stressed the reputation of Northern Ireland seed potatoes not only for the vigour and productiveness of the stocks but also for the excellent condition in which the seed itself is supplied under Government supervision.

A similar exhibit was staged at the Imperial Fruit Show in the years 1933 and 1934. At these shows Northern Ireland seed and ware potatoes and fruit were exhibited, while in the case of the 1934 show samples of Northern Ireland honey were also displayed. In 1933 the show was held at Bristol, while in 1934 the centre was Leicester.

RESEARCH.

The increase in the productivity of agriculture during the nineteenth century is generally recognised as one of the chief contributions of agricultural research to the farming community and to the nation. Consequently, at a time when over-production is widely believed to be the cause of a grave agricultural crisis and when not the least of the difficulties confronting agricultural departments concerns the disposal of surplus produce, it might be expected that research work would be given at best a secondary place in a policy of agricultural development. Indeed it was claimed in the worst years of the depression that science had gone ahead too rapidly for the economic structure of agricultural production and marketing ; that it had brought plenty with little visible advantage to the consumer and increasing poverty for the producer and that on the analogy of the hare and the tortoise, science must go to sleep for a time until agricultural organisation had caught up with it. While research in the science of production has undoubtedly brought in its train a number of difficult economic problems, it has fortunately not been found necessary to curb the activities of the scientist in the hope that these problems will automatically solve themselves. On the contrary, as has been already indicated at sufficient length, these problems have been directly attacked and an attempt has been made to bring the organisation of agricultural marketing more into line with progress in the natural sciences.

The position to-day is, thus, very different from what it was a quarter of a century ago, or even a decade ago, when increased production too often meant low returns for the farmer and high profits to the distributor with little or no reduction in the price to the consumer. The producer to-day is, through the introduction of the marketing schemes in a position to see that increased productivity due to the application of scientific research will not undermine his economic position and that the advantage of lower costs of production will be passed on to the consumer and will help to stimulate an increased demand for agricultural products.

Consequently, it may be said that there has rarely been a greater need for research than at the present time and that

circumstances have rarely been so favourable for the practical application of its results.

Many instances of the way in which research may be expected to benefit the industry at the present time are found in the report in Appendix I. of the work of the research divisions of the Ministry.

A considerable amount of work has been done each year to investigate better methods of feeding and manuring and to propagate high yielding strains of seed and to combat disease in plants and animals. Of the latter the eradication of bovine tuberculosis has for some time concerned agricultural research workers throughout the world. The Animal Diseases Division of the Ministry has been occupied during the period covered by this Report in carrying out an important experiment with the Spahlinger vaccine, which is designed to give milk herds immunity from tuberculosis. An outline of the experiment is given in Appendix I. and a full report has already been published. The successful results of this work encourage the hope of removing a disease which not only causes direct loss to farmers but is very largely responsible for the reluctance of the public to increase their consumption of milk.

If the results of such experiments as this could be applied to practical farming there is no doubt that costs of production could be very considerably lowered and returns correspondingly increased. It is a legitimate grievance of the research worker, however, that he often never sees the practical application of his work. In a competitive agricultural economy, every scientific invention must be tested according to its commercial value, and if it cannot be shown to offer an immediate profit, it is likely to be jettisoned without a fair trial.

In the organisation of agriculture which is at present growing up in Northern Ireland, however, the prospects of applied reseasch are particularly good. In the marketing schemes the Ministry has attempted an experiment for which greater knowledge of, for instance, the factors affecting costs of production, the quality of live stock and grain and the keeping quality of eggs and milk is essential.

Finally, the farmer himself is now in a better position to make use of the results of science. Sir Daniel Hall has said, " that a great proportion of indifferent farming to-day is due to lack of confidence." The stable market which the Ministry and the other Agricultural Departments are attempting to secure for the British farmer is calculated to provide that confidence on the basis of which high farming becomes a possibility.

LIVE STOCK SCHEMES.

During the three years under review, the various live stock improvement schemes continued to function on normal lines and the main features of each scheme remained unaltered. These schemes aim at encouraging improvement in the principal branches of the live stock industry of Northern Ireland, viz., cattle breeding, milk production, swine breeding, sheep breeding (blackface and lowland) and horse breeding. The basic principles of each scheme have been outlined from year to year in previous Annual Reports of the Ministry and, furthermore, the schemes are published annually and copies may be obtained free of charge upon application to the Ministry. In these circumstances it is not proposed to include in this Report the usual explanatory statement relating to the various schemes but detailed statements setting out the operations of each scheme during the period under review will be found in Appendix III.

With regard to goat breeding, the Ministry continued to co-operate with the Ulster Goat Society which received a grant of £50 from the Ministry in the year 1931–32, and a grant of £15 in the year 1933–34.

Horse Breeding Scheme.

This scheme was again in operation in every county in each of the years 1932, 1933 and 1934, on practically the same lines as in previous years. In 1932 one change was introduced empowering County Committees to fix the number of mares owned by one individual which may be served by a premium stallion.

The annual exhibition of stallions was held in February in each of the years 1932 and 1934 at which thoroughbred and Clydesdale stallions competed for premiums and prizes. Owing, however, to the railway strike in 1933 and to the consequent difficulty of transporting animals it was reluctantly decided to abandon the function which was to have been held in that year.

In each of the three years lists of eligible stallions were issued to County Committees who were thus in a position to make their selections for the award of premiums to stallions of the Thoroughbred, Clydesdale, Half-bred and Irish draught breeds. In Table III below particulars are given of the distribution of premiums in the various counties in each of the three years. Registers of stallions were also published giving particulars of the stallions standing for premiums in each season.

Thirteen loans were granted for the purchase of stallions of which particulars are given in the following table :—

County	1932		1933		1934	
	Breed and Number of Loans	Total Number of Loans	Breed and Number of Loans	Total Number of Loans	Breed and Number of Loans	Total Number of Loans
Down ..	1 Half-bred	1	1 Thoroughbred 2 Clydesdales	3	2 Thoroughbreds	2
Fermanagh ..	–	–	1 Thoroughbred 1 Clydesdale	2	–	–
Londonderry	–	–	1 Clydesdale	1	–	–
Tyrone ..	2 Clydesdales	2	–	–	2 Thoroughbreds	2
Totals ..	3	3	6	6	4	4

In addition to loans, the purchasers of the stallions were given subsidies equal in the case of the Half-bred and the Clydesdales to half the purchase price and, in the case of all the Thoroughbreds except one, to two-thirds of the purchase price. In the case of the remaining Thoroughbred, a subsidy was given of one-third of the amount of the purchase price. Each purchaser was required to give an undertaking that he would keep the animal for the period of the loan, viz., 5 years, in the district in which it had been located.

In addition to the general regulations under the Horse Breeding Scheme the Down County Committee made regulations requiring premium stallions to stand for service at a market town in the County on at least one day each week during the season and also that not more than two mares belonging to one owner should be served under the Scheme. Londonderry County Committee made a regulation requiring the owner of a mare being offered for service to hand to the owner of the stallion prior to service a veterinary surgeon's certificate that the mare is sound. This Committee made a further regulation that 50 per cent. of the mares served under the Scheme should be the property of farmers whose valuation does not exceed £30.

MARKET INTELLIGENCE.

Throughout the period under review, the Ministry continued to provide an up-to-date and reliable service of market information for the guidance of farmers and others interested in the sale of agricultural produce. A statement giving the prices and quantities of agricultural produce sold at certain of the most

important markets in Northern Ireland during the week is issued each Monday evening. A Supplementary report dealing with the prices of potatoes is also issued during the export season, whilst reports giving the prices of eggs, poultry and butter in cross-channel centres and in Belfast are also issued each week. Reports of transactions at the more important live stock fairs in the country continued to be issued regularly during the period together with a weekly report giving particulars of the prices realised for stock at the Belfast Auction Marts. The Monthly Report of the Ministry, in addition to reviewing the progress of farm work and of agricultural conditions generally throughout the previous month, contains information relating to the prices of live stock, agricultural produce, feeding stuffs and fertilisers and seeds. Advisory notes regarding the work which should be done on the farm during the coming month, and announcements as to lectures and broadcast talks on agricultural subjects are also included. An important feature of the report is the inclusion of explanatory notes regarding developments in agricultural legislation.

The circulation of this Report has increased considerably since 1931, and in February, 1936, when 4,000 copies were printed a letter was issued with each copy asking readers to state whether or not they wished to continue to receive the publication in future months. Only about 500 either failed to reply or requested the withdrawal of their names from the mailing list ; of the 87% who desired to continue as readers of the Report a large number expressed their appreciation and offered helpful criticism.

The Ministry is greatly indebted to the editors and proprietors of newspapers in Northern Ireland for the reproduction in the Press of the information contained in the Monthly and other reports and which is of interest to the agricultural community.

In addition to the general publications referred to above the Ministry also circulates information of special interest to limited groups of producers and traders regarding the products in which they are interested. The Bulletin of Agricultural Market prices for farmers broadcast from the Belfast station of the British Broadcasting Corporation has been continued daily (except Sundays and Saturdays) at 5.55 p.m.

GENERAL.

The second winter census of live stock was taken in January, 1934, in conjunction with the Ministry of Agriculture and Fisheries for England and Wales and the Department of Agriculture for Scotland. The inquiry related to the numbers of live stock in Northern Ireland at the 1st February, 1934, and was necessary to provide data regarding the operation of the Pigs Marketing

Scheme and the proposed introduction of schemes for the regulation of the marketing of other agricultural produce.

The scheme whereby farmers are given assistance in the keeping of accounts of their farms has been continued and 46 farmers are now availing themselves of the facilities offered by the Ministry.

It is impossible to conclude this report without referring to an important change in the personnel of the Ministry which occurred through the retirement of Mr. James S. Gordon, D.Sc., C.B.E., from the post of Permanent Secretary to the Ministry on the 30th September, 1933. Dr. Gordon had been Permanent Secretary to the Ministry for a period of over ten years since its inception at the 1st January, 1922. He had previously spent several months arranging for the organisation of the Ministry so that it could begin to function efficiently at the appointed day. It was due to Dr. Gordon more than to any other man that the Ministry, during the first ten years of its existence, succeeded in becoming an organisation for the assistance of agriculture in Northern Ireland, which commanded the complete confidence of farmers. Dr. Gordon came to Northern Ireland after upwards of twenty years' service in the Department of Agriculture and Technical Instruction for Ireland, in the work of which Department he had played an ever increasing part, first as a Junior Inspector and subsequently as Chief Inspector and Deputy Assistant Secretary. He combined those rare qualities of long administrative experience with a wide knowledge of practical agriculture and of the farming community of his native Province, together with an unrivalled keenness and enthusiasm for the work to which he had set his hand. It was due in a very large measure to these invaluable assets that the Ministry, during the first eleven years of its existence, succeeded in becoming an organisation which commanded the confidence of farmers. It is not possible in this Report to deal adequately or at any length with Dr. Gordon's contribution to the welfare of agriculture in Northern Ireland. It must suffice to mention one or two achievements which have left their mark, not alone on Northern Ireland, but on the British Isles as a whole, and with which his name will always be associated. As one of the earliest pioneers in the realm of Government encouragement to the improvement of live stock, he has left a record behind him which it would be difficult to equal. He has had the satisfaction of seeing his live stock improvement schemes not only bear abundant fruit in his own country, but adopted in England and Scotland. The coping stone to his long efforts for the live stock industry was undoubtedly the Live Stock Breeding Act (Northern Ireland) 1922, the success of which has been acknowledged in every responsible quarter and which was subsequently adopted by the

Irish Free State and later in Great Britain. During the early years of his work in Dublin Dr. Gordon realised the great contribution which the poultry industry was capable of making to the agricultural wealth of Ireland. The Northern Ireland Marketing of Eggs Acts, the instructional and research work in poultry keeping, the schemes for the development of the poultry industry in Northern Ireland by the improvement of stock and management, owe much, if not all, to his foresight and initiative, and it must be some considerable satisfaction to him that when he retired from his post in 1933 the output of the poultry industry in Northern Ireland exceeded that for the whole of Ireland in 1906, when he commenced the task.

As a farmer's son, who through his own initiative and perseverance had enjoyed the benefits of a University agricultural education, Dr. Gordon was an enthusiastic believer in the necessity of agricultural education and research as the basis of development, and he enjoyed what was to him the great privilege of instituting and guiding during its early stages the existing scheme of agricrltural education and research. It is upon this solid foundation that the success of the earlier and present marketing schemes have been built. To his tireless energy, intensity of purpose, and the gift of attracting round him men into whom he could instil his own enthusiasm and high ideal of public service, the Ministry owes more than can be recorded. It was a tribute to his ability and the confidence in which he was held by farmers generally that upon the establishment of the Pigs Marketing Board in 1933, producers themselves with one accord expressed the wish that he should continue his services to agriculture and to the province which he knew and served so well by becoming Chairman of the Board.

I have the honour to be,

Your Grace's faithful servant,

BASIL BROOKE,
Minister.

G. S. Robertson,
Secretary.

Ministry of Agriculture,
Stormont,
Belfast.

3rd May, 1937.

APPENDIX I.

Report on the Work of the Research Divisions of the Ministry.

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APPENDIX I.

CHEMICAL AND ANIMAL NUTRITION DIVISION (1931-34).

Soils and Fertilisers.

POTATO MANURIAL EXPERIMENTS.

The experiments, designed to ascertain the most efficient mixture of nitrogen, phosphates and potash, reported previously were continued. One of the new concentrated fertilisers was also compared with the Ministry's standard mixture. The results were presented in a paper which appears in the Journal of the Ministry of Agriculture, Vol. III (1). The most satisfactory results were obtained using a manure having nitrogen, phosphates and potash present in the ratio 1 : 3 : 2½, that is similar to the recommended mixture of 1 sulphate of ammonia, 4 superphosphate and 1 muriate of potash. The concentrated fertiliser containing the three manurial ingredients in the 1 : 3 : 2½ ratio, when applied at the rate of 4½ cwts. per acre, gave results equal to the 1 sulphate of ammonia, 4 superphosphate and 1 muriate of potash mixture when used at the rate of 9 cwts. per acre.

RECLAMATION OF BOGLAND.

The experimental work previously reported was continued and has been concluded. The work formed the subject of a paper in the Ministry's Journal (2). The following conclusions were drawn from the results obtained :—

1. Lime and farmyard manure are both essential for peat reclamation.
2. Two tons of lime per acre was the most efficient dressing.
3. Soluble and insoluble phosphatic fertilisers gave similar results when used with lime.
4. Without lime, nitro chalk gave better results than either sulphate of ammonia or nitrate of soda.
5. The highest yield was obtained from a dressing of 2 tons lime, 15 tons farmyard manure and a complete dressing of artificial fertilisers.

METHOD FOR DETERMINATION OF THE MANURIAL REQUIREMENT OF SOILS.

A number of soils have been examined each year for deficiency of phosphates and potash by the Mitscherlich pot culture method, in order to see whether this method, which is widely used in Germany, is applicable to our conditions.

Only three soils of a total of twenty-six appeared to be adequately supplied with phosphate. Potash deficiency was indicated in about four soils. These results concur with the general opinion that phosphate starvation is widespread in the soils of Northern Ireland. Ten of the soils were tested in the field for fertiliser response. It was found that in about 2 cases out of 3 the method had given reasonably correct forecasts of the response to fertilisers.

LIMING.

Data on soil acidity and response of crops to liming are being collected. The figures obtained show that acidity is widespread in Northern Ireland soils. The response of crops to lime, however, is generally small. This is chiefly due to the types of crop grown. Such crops as sugar beet, lucerne and barley, which require neutral or only slightly acid soils, are seldom grown. The effect of lime is generally best seen in the case of first crop hay. It is hoped to publish data on this subject at an early date.

Poultry.

CHICKEN GROWTH EXPERIMENTS.

The addition of common salt to a ration of cereals improved the growth rate and the condition of chicks even when they received separated milk to drink *ad lib.* One quarter per cent. of common salt in the ration gave as good results as ½ per cent.

or 1 per cent. salt. Further evidence was obtained that the sodium in common salt plays a bigger part than the chlorine when salt is used to supplement ordinary rations. Considering both the rate of growth and the rate of mortality, glycine hydrochloride proved to be of no value as a supplement to a ration of cereals and soya bean meal, but the growth rate was much higher and mortality much lower when common salt or (to a slightly less extent) sodium carbonate were used as a supplement to the same ration (3). Iron ammonium citrate when used to supplement a ration of cereals and separated milk did not produce any perceptible effect.

The effect of raising the protein content of the rearing ration has been investigated each year with somewhat contradictory results. On the whole, the results of these studies do not confirm the findings of most American workers that 20 per cent. protein is the optimum level in rearing rations.

The effects of very high protein levels ranging up to 28.3 per cent. of the ration (equivalent to 49.5 per cent. of ration of soya bean meal) were studied. No pathological effects of these high protein levels were observed.

Considerable attention has been devoted to studies of a form of leg weakness which was not curable by the use of cod-liver oil, but which was curable by separated milk. It was found that this condition was sometimes, but not generally affected beneficially by large doses of bran and by sulphur, but it was not influenced by magnesium sulphate. The incidence of the leg weakness was more acute when soya bean meal was included in the mash than when fish meal was included. Meat meal seemed to be little better than soya bean meal in this respect. It did not occur when dried milk powder or dried yeast was included in the mash. Yeast autoclaved for 5 hours at 120°C was still effective in preventing leg weakness. Egg white and dried whey were also capable of preventing its occurrence.

The use of dried milk and dried yeast not only led to freedom from leg weakness, but produced more rapid and more even growth in the birds.

LAYING EXPERIMENTS.

It was found that when ½ per cent. common salt was included in the laying mash, oystershell being supplied *ad lib.* as a source of lime, no other mineral supplement was necessary, even when the other constituents of the mash were of vegetable origin. This level of salt gave as good results as those obtained from the use of higher levels (4). It was found that oyster shell grit could be replaced by limestone grit. When oyster shell grit was offered *ad lib.* no effect was produced by including limestone flour in the mash either at the rate of 1½ per cent. or 5 per cent. The use of artificial illumination in winter had no effect on production, but it should be noted the level of production in the control pens was of a very high order.

High levels of production were obtained from the use of a laying mash composed of 2 parts by weight of cooked potatoes, 1 part by weight maize meal, 1 part by weight coarsely ground oats, when it was supplemented with separated milk or with common salt and steamed bone flour. The food consumption was, however, abnormally high. This ration, when not supplemented by separated milk or common salt, gave only a very low rate of production. The effect of supplements of fish meal, high grade meat meal, soya bean meal and a mixture of meat meal and soya bean meal were compared and no difference was found. The effects of replacing the Sussex ground oats in the standard laying ration with coarsely ground oats, extra bran or extra maize meal were studied. The lowest level of production was obtained from the standard mixture, but the difference may not be significant.

Investigations have been carried out concerning the effect of feeding a laying mash of cereals supplemented only with common salt. This mash has been fed to nine groups of birds, and in all cases high levels of production were obtained. No significant return was obtained from the use of protein supplements except in 1933, when in each of four experiments the groups receiving protein gave a slightly higher production than did the unsupplemented group. The difference in each experiment considered separately was not significant.

The effect of grass runs on production was also studied. The number and size of eggs laid were unaffected by the birds having access to grass runs, both for birds

receiving protein supplements and for birds receiving no protein supplement. The fertility and hatchability of the eggs were, however, extremely low both for the high and low protein birds when the runs were devoid of grass.

MINERAL BALANCE STUDIES.

Some earlier work on the storage of calcium and phosphorus by pullets prior to laying and during the early stages of laying was mentioned in the report for 1930–31. A full account of this work has since been published (5). The experiments demonstrated that there may be a connection between phosphorus excretion and shell formation, at least on certain rations.

Later experiments of a similar nature have shown that part of the benefit derived from the addition of common salt to a cereal plus soya bean meal ration is due to the favourable effect of this ingredient on calcium retention. It was possible to show that the voiding of phosphorus concomitant with shell formation did not, in this experiment, involve any heavy drain on the sodium reserve of the bird. This work has been the subject of a further publication (6).

Both the above series of experiments have suggested strongly that laying birds receiving correct cereal plus soya bean meal plus salt rations, together with lime, do not require any extra source of phosphorus.

SERUM PHOSPHATASE STUDIES.

Serum phosphatase determinations may prove to be of some use in diagnosing early cases of the various types of leg weakness, and possibly also of use in studying the physiology of the laying bird. Observations are, therefore, being made on the serum phosphatase activity of the fowl as affected by age, nutrition and the general cycle. Data have been secured for normal White Wyandotte chicks from a day old up to the age of six weeks. There is a sharp rise to a maximum value during the first two weeks; the value then falls equally sharply to a lower level than that for day olds, thereafter the value falls at a fairly uniform rate towards a lower level as maturity approaches. Normal figures have been secured on the same birds for serum calcium, serum inorganic phosphorus, and tibia ash. Observations have also been made on the serum phosphatase activity of a laying flock (7), but the causes of the great variability of the values for laying birds have not been traced.

Milk Testing.

The usual routine work of the milk testing department has been carried out. The following table shows the number of samples analysed, and the number of reports issued to farmers :—

Year.	No. of samples analysed.	No. of reports issued.
1931–32	151,804	20,147
1932–33	150,559	20,161
1933–34	144,047	18,097

The decrease in the number of samples analysed in 1933–34 was due to the lapse of two milk recording associations at the beginning of 1933. A report on the work of the milk recording associations has been published (8) showing that very substantial increases in milk and butterfat yields have been obtained and that, if the fullest benefit is to be derived from milk recording, the keeping of records must be continuous. It is also shown that a greater percentage of young cows are being retained in the herds. A most important fact made evident by the tables is that the average yield of the 1930 heifers exceeded that of the 1924 heifers by over 100 gallons.

COMPOSITION OF MILK.

The statistical analysis of the data collected at the Agricultural Research Institute for Northern Ireland has been completed, and the results have been published. The first paper (9) deals with the influence of the season of the year and climatic conditions on the yield and composition of the milk of a herd, and has already been referred to in a previous report. The second paper (10) reports a study of the errors involved in certain systems of milk recording and shows that, when the milk is weighed weekly, testing for butterfat must be undertaken monthly, if errors of more than 10 per cent. in the lactation yield of butterfat are to be avoided. A third paper (11) deals with variations in the composition of milk from the legal point of view and

presents data to show that the existing Sale of Milk Regulations are an unsatisfactory basis on which to base prosecutions for adulteration. The extent of the variations in the composition of the milk of a well managed herd are shown and suggestions for the amendation of the existing Sale of Milk Regulations are made. Data on factors influencing the acidity of milk are still being collected.

THE USE OF AMYL ALCOHOL FOR MILK TESTING.

As a result of the receipt of unsatisfactory samples of amyl alcohol for milk testing at the laboratory, an examination of the recognised tests for the suitability of amyl alcohol was undertaken. The results of this investigation were embodied in a note in the Analyst (12) and show that amyl alcohol for milk testing should be guaranteed to give, when used in the Gerber method, a butterfat test with an error of not more than $\left(\pm\right)$ 0.05 per cent. of butterfat, as compared with the result obtained by the Rose-Gottlieb method.

BULL RECORDING.

A scheme whereby the supervisors of milk recording associations collect details of the progeny of registered dairy bulls and forward them to the Chemical Research Division for examination, is now established. Periodical reports have been made pointing out the great value of the prepotent bull. Difficulties in the collection of data have been experienced owing to the practice of some farmers of disposing of their best heifers, which are usually sired by the best bulls. Such a short-sighted policy is greatly to be deprecated and it is hoped that more widespread publicity as to the value of bull recording will result in the cessation of this practice. An analysis of bull recording data will be submitted to the forthcoming Journal of the Ministry of Agriculture (N.I.).

Grass Silage.

In 1932 preliminary trials were conducted to assess the value of additions of acid to the grass in making grass silage. In these trials small concrete silos were used. In 1933 the work was extended and grass silage was made in 8 wooden silos having a capacity of about two tons of fresh grass. The first four silos were filled in June and the following treatments were carried out :—

1. Ordinary grass silage.
2. Grass sprinkled with a solution of molasses.
3. Grass sprinkled with a solution of acid and molasses (Defu solution).
4. Grass sprinkled with a solution of acid (A.I.V. solution).

Full records of yields, etc., were taken and digestibility trials with sheep were carried out on both the grass which was used for making the silage and also on the four different types of silage. The four remaining silos were filled with the aftermath from the same field and the same treatments repeated. Unfortunately, the wooden silos did not prove to be sufficiently air-tight and a rather large proportion of the silage was spoiled by mould. Sufficient good material was available, however, for digestibility trials, palatability tests and analytical work. The silos have now been modified and are being used again this year to secure more accurate figures for the losses involved by the four different methods. A report of these trials will be made when the data from the present experiment are complete.

Pig Experiments.

The piggeries at the Agricultural Research Institute at Hillsborough were completed in 1933, and while attention has had to be focussed on the selection and grading up of the breeding stock, a certain number of pigs have been available for feeding trials. In addition experimental work in connection with the control of anaemia has been carried out. The latter disease, known locally as "Thumps" or "Blows" is responsible for serious losses among young pigs. Various methods of control have been made the subject of experiments and weekly estimations of the hæmoglobin content of the blood of the young pigs were used to study the effects of the various treatments. Complete control of the trouble was effected by a method suggested by American workers in which the teats of the nursing sow are painted twice daily with a solution of iron sulphate, copper sulphate and molasses in water.

During the past eighteen months large quantities of rye middlings have come on the feeding-stuffs market. Feeding trials with fattening pigs have been carried out and have shown that when a ration containing 40 per cent. of rye middlings is used serious digestive disturbances may ensue. On the other hand a ration containing 20 per cent. of rye middlings did not appear to have any ill effects. The quality of the rye middlings on the market appears to be very variable.

General.

The general analytical work in connection with the various schemes of the Ministry was continued. The staff of the Division have co-operated with other officers of the Ministry in investigations into the various factors governing the keeping quality of eggs and have made chemical examinations of a number of waters from creameries.

Teaching.

The normal teaching programme of the Department of Agricultural Chemistry of the Queen's University of Belfast was carried out by the staff of the Division. Evening lectures were delivered to branches of the Ulster Farmers' Union and other bodies during the winter months.

Publications.

(1) Potato Manurial Experiments.—J. C. Baird, J. Ministry of Agriculture, N.I., Vol. III, 1931.

(2) The Reclamation of Bogland and the Production of "Seeds" Potatoes.—J. C. Baird and R. Rae, J. Ministry of Agriculture, N.I., Vol. IV, 1933.

(3) The Role of Salt in Poultry Nutrition (Part I).—J. H. Prentice, J. Ministry of Agriculture, N.I., Vol. IV, 1933.

(4) Ibid. (Part II).

(5) Mineral Balance Studies on Poultry.—R. H. Common, J. Agricultural Science, 22, 576 (1932).

(6) Observations on the Mineral Metabolism of Pullets.—R. H. Common, J. Agricultural Science, 23, 555 (1933).

(7) Serum Phosphatase in the Domestic Fowl.—R. H. Common, Nature, 133, 572 (1934).

(8) The Progress of Milk Recording in Northern Ireland.—J. Houston, J. Ministry of Agriculture, N.I., Vol. IV, p. 37, 1933.

(9) The Yield and Composition of Milk with Special Reference to the Influence of Climatic Conditions and other Factors.—J. Houston and R. W. Hale, J. Dairy Research, Vol. III, p. 294, 1932.

(10) The Errors involved in certain Methods of Estimating the Lactation Yield of Milk and Butterfat.—J. Houston and R. W. Hale, J. Dairy Research, Vol. IV, p. 37, 1932.

(11) The Legal Standards for Butterfat and Solids-Not-Fat.—J. Houston, J. Ministry of Agriculture, N.I., Vol. IV., p. 47, 1933.

(12) The Use of Amyl Alcohol for Milk Testing.—J. Houston, The Analyst, Vol. LVIII, p. 151, 1933.

SEED TESTING AND PLANT DISEASE DIVISION.

Two features in connection with the work of the Division during the period under review are outstanding. The appointment of an agricultural zoologist, referred to in the previous report, has made possible a notable expansion of the activities of the Division and has resulted in a strengthening of the position, with corresponding

augmentation of the value, of the plant pathology section, which has been able to offer increased facilities for advisory service, of which the agricultural and horticultural communities have quickly made use. This increased demand for help is highly satisfactory as indicating the value of past advisory work and a quickening appreciation, on the part of practical men, of the scientific services available. The second point is in part corollary ; not only has a marked livening of interest on the part of farmers and gardeners evinced itself but commercial houses have shown a noticeable increase in interest in the work of the Division and one large firm has expressed its interest and confidence in the form of a post-graduate research scholarship to the University to enable students of the Department of Agricultural Botany to follow up research after graduation.

Financial stringency has limited experimental work materially but, as will appear below, all sections have carried on their field work as vigorously as was possible in the circumstances.

Seed Testing.

During the three seasons under review the samples tested were made up as follows:

	1931-32 %	1932-33. %	1933-34 %
From wholesale and retail merchants ..	65	68	59
From farmers and co-operative societies .	6	4	5
From Ministry's official samplers ..	8	9	11
From officers of public departments ...	21	19	25
Total number of samples ..	3,494	3,184	3,543

It will be seen that wholesale and retail merchants continued to provide the vast bulk of the samples received. An analysis of the various kinds of seed tested is given in Table 1.

Table I.

Annual distribution of kinds of seed tested.

Kind of Seed.	Percentage of total.			Percentage increase (+) or decrease (−) in number of samples received as compared with previous seasons.		
	1931-32	1932-33	1933-34	1931-32	1932-33	1933-34
Ryegrass	72	73	55	+ 5	− 8	− 16
Other grasses	7	6	12	+ 8	− 25	+121
Flax	2	5	11	−38	+154	+128
Clovers	10	7	8	+ 9	− 40	+ 43
Cereals	3	3	5	+77	+ 2	+ 61
Roots, vegetables, etc. .	6	6	9	+38	− 11	+ 63

As usual, most of the samples tested were of the ryegrass group. A decrease in this group occurred in 1933–34, but this was more than offset by striking increases in other species.

Results of purity and germination tests for the more important species are presented in Table II. In the case of germination the previous seasons' figures are given for comparison.

Table II.

Purity and germination results from the more important species for three seasons 1931–34.

Species.	Season.	Number in average.	Purity.					Germination.			
			Mode %*	Average %	Injurious weeds. No. of samples containing: Over 1%	Injurious weeds. No. of samples containing: Over 2%	No. of Samples containing Ergot	Mode %*	Average %	Average Hard Seed %	Average for eight seasons, 1923–31.
Perennial Ryegrass	1931–32	1,121	99	96.6	–	75	35	88	85	–	87
	1932–33	927	99	96.9	–	56	42	92	90	–	
	1933–34	754	99	96.5	–	79	76	92	89	–	
Italian Ryegrass	1931–32	483	99	96.4	–	38	10	86	83	–	84
	1932–33	438	99	96.4	–	55	5	92	87	–	
	1933–34	379	99	94.5	–	81	17	91	82	–	
Mixed Ryegrass	1931–32	172	99	96.7	–	8	6	82	82	–	82
	1932–33	140	99	95.6	–	29	3	90	87	–	
	1933–34	75	99	95.4	–	11	6	88	79	–	
Crested Dogstail	1931–32	112	–	95.8	–	3	15	84	80	–	
	1932–33	90	–	96.0	–	4	23	94	87	–	
	1933–34	63	–	94.9	–	4	20	94	89	–	
Red Clover	1931–32	114	–	96.7	0	–	3	–	80	4	
	1932–33	59	–	97.6	0	–	0	–	87	5	
	1933–34	70	–	97.7	0	–	2	–	88	6	
White (Dutch) Clover	1931–32	16	–	93.5	4	–	0	–	90	4	
	1932–33	19	–	97.0	1	–	0	–	93	3	
	1933–34	20	–	95.0	0	–	0	–	90	3	
Wild White Clover	1931–32	54	–	96.3	2	–	1	–	85	5	
	1932–33	73	–	97.1	1	–	3	–	80	4	
	1933–34	52	–	97.2	0	–	2	–	90	5	
Alsike Clover	1931–32	49	–	96.3	0	–	0	–	86	6	
	1932–33	37	–	96.4	0	–	1	–	87	4	
	1933–34	45	–	97.0	0	–	0	–	86	8	
Flax	1931–32	46	–	99.1	–	0	0	–	80	–	
	1932–33	72	–	97.9	–	0	0	–	86	–	
	1933–34	109	–	97.1	–	–	0	–	89	–	
Timothy	1931–32	19	–	99.6	–	0	0	–	95	–	
	1932–33	23	–	99.1	–	0	4	–	95	–	
	1933–34	32	–	98.4	–	0	6	–	93	–	
Cocksfoot	1931–32	36	–	91.3	–	0	0	–	91	–	
	1932–33	36	–	92.7	–	0	1	–	94	–	
	1933–34	36	–	92.2	–	0	1	–	90	–	

*The " Modal " figure is that which occurs most frequently in a series. Thus in Table II perennial ryegrass in 1931–32 showed a germination of 88 per cent. more frequently than any other figure. The " Mode " thus reflects the general quality of seed obtainable more accurately than does the average.

The figures given in the table refer to tests conducted on the " Continental " system : only a limited number of requests for " Irish " tests were received. In general the quality of seeds for the three years under review was excellent. It will be noted from Table II that the germination figures shown by the ryegrasses were far higher than the average of previous seasons' results. The other grasses and clovers were also satisfactory.

Official check tests were made on 266 samples in 1931–32, on 274 samples in 1932–33 and on 368 samples in 1933–34. With the exception of packeted vegetable seeds the general quality was good. Enquiries were instituted by the Ministry in 57 cases in 1931–32, in 36 cases in 1932–33 and in 56 cases in 1933–34. In the case of packeted vegetable seeds many samples showed very low germinations. In almost every one of these cases the seed was found to be old, and to have been packeted for a number of years. Traders are strongly urged not to carry over vegetable seeds, as, after the first season, most of them rapidly lose germinating power.

Standardized International Rules for seed testing were adopted in July, 1931, by the International Seed Testing Association and representatives of trade organisations. Samples tested according to these rules are, upon request, reported on International certificate forms. The latter are of two kinds, one (orange coloured) relating to lots which have been sampled and sealed by official samplers, the other (blue) concern samples which are submitted direct by merchants. No additional charge is made for International certificates. They have been accepted by the representatives of most countries and their use aims at facilitating international trading. The number of requests received for International certificates were :—1931–32 : 1 ; 1932–33 : 16 ; 1933–34 : 41.

In March, 1932, a new leaflet (No. 66—" Seed testing facilities for traders ") describing the seed testing service available to members of the seed trade was issued. It contains detailed instructions for drawing and submitting samples for test, gives particulars of fees chargeable, and includes an outline of legislation in force for control of the trade in seeds.

RESEARCH AND ADVISORY SERVICE.

The usual breadth of ground has been covered by advisory enquiries but the bulk of cases fall into three main categories, namely : enquiries regarding grass and clover seed mixtures ; the identification of plants ; and advice on weed control.

Under the second heading, an unusual number of cases of stock poisoning called for investigation and the proportion of such cases in which definitely poisonous species were found as weeds in the pasture concerned was more than usually high.

(A) THE ULTRA-VIOLET LIGHT TEST.

(i). The value of this test for ryegrasses has been investigated. From a very considerable accumulation of data, largely of a genetical nature, certain definite uses have been established. In the first place awnless non-reacting seedlings present in Italian ryegrass samples may be definitely classed as perennial ryegrass individuals. This is exceedingly important from the practical point of view, because the varietal purity of commercial samples can now be determined by laboratory tests. Utilising the test, the varietal purity of a large number of Italian ryegrass samples was investigated. It was found that usually, the admixture of perennial ryegrass present was surprisingly high, which suggests (and this is borne out by collateral experience) that mixed ryegrass is all too frequently sold as Italian ryegrass. In the second place the ultra-violet test can be used for distinguishing different strains of perennial ryegrass. Each of the strains in commerce has a constant content of reactors. This content is greatest in the case of inferior, and least in the case of agriculturally valuable strains. For instance, British indigenous has less than 5 per cent. reactors, British and Irish commercial about 10 per cent. reactors, while inferior New Zealand South Island lots and American " domestic " have as much as 80–90 per cent. reactors.

Further reports were published (4, 5) in 1932 and 1933 embodying these findings, and suggesting that major degeneration in perennial ryegrass is due to hybridization with Italian ; that such major degeneration is measurable by the content of fluorescent reactors in a sample but that there may be a distinct minor degeneration through unfavourable selective influences apart from hybridization.

A series of experiments has also shown that the fluorescence test might reasonably be substituted for the much more laborious Hellbo test compulsory under existing import regulations in certain countries.

(*ii*). *Suction-Force Tests.*—A new method of discriminating between strains and species by measurement of the " Suction-force " (water absorbing force) exerted against standard sugar solutions is under examination and shows some promise.

(B) INDIGENOUS STRAINS OF GRASSES.

The importance of strain in grasses has recently come into prominence. New strains are now being put on the market which are claimed to be more productive, particularly under grazing conditions, than those already in commerce. To Northern Ireland farmers the question has a two-fold interest, one concerning the improvement of permanent pasture, and the other in relation to the ryegrass seed-production industry. Work, accordingly, has been directed to ascertaining the value of these new strains from the pasture hay and seed production points of view.

(i) *Trials.*—In collaboration with the Director of the Agricultural Research Institute of Northern Ireland, some forty different strains of perennial ryegrass were sown in small plots at Hillsborough, in spring 1933. These were collected from various sources, some having been got from old pastures in Northern Ireland, some representing ordinary British commercial strains, while others were obtained from overseas. The plots made successful establishment in 1933, and in the spring of 1934, after a preliminary general cut, each plot was divided into two parts, one for hay and seed estimation, the other for periodic cutting with a lawn mower; the latter with a view to determining relative productivity under conditions analogous to grazing. Data as to hay, seed and pasture productivity were obtained during 1934. The results to date are interesting; so far, the most outstanding feature has been the early failure of certain overseas strains. The work is being continued. During July, 1934, members of the Ryegrass Machiners Association were conducted over the plots and the work in progress explained to them.

A thorough search of numerous islands in Strangford Lough known to have been out of cultivation for very long periods, revealed the presence of a sparse scattering of an apparently good type of perennial ryegrass on one island. Hand collections of heads from this grass have been made in autumn during two seasons and in 1934 a small plot was sown down with this seed on another isolated island, in order to bulk up a strain under conditions rendering cross-pollination almost impossible. It is believed that this strain will prove very long-lived and suitable for local conditions.

(ii) *Demonstrations.*—In the first and third seasons of the period under discussion, farm scale demonstration plots of ½ acre size were laid down in collaboration with the County Agricultural staffs for the purpose of familiarizing farmers with the comparative merits of indigenous and commercial strains of grasses. In each case a good standard mixture was sown, the perennial ryegrass and cocksfoot seed being of an indigenous strain in one of each pair of plots. The chief purpose of indigenous strains in grasses is pasture-forming capacity by virtue of longevity. As was therefore expected, the results of these demonstrations to date have been mixed, because in all cases the usual practice of the farmer was pursued and different styles of management influence more markedly than any other factor, the value of a herbage strain. In cases where the pastures were grazed from the start, the indigenous strains have shown to advantage: In cases where two hay crops were taken, the disadvantage to the indigenous types has been shown. Somewhat surprisingly, the hay yields in the first harvest years, taking all centres together, was approximately equal from indigenous and commercial strains, although the indigenous types used did not profess to be hay strains. Speaking generally, the demonstrations are showing that for pasture purposes, judiciously managed, indigenous types are valuable here but that erratic management easily renders them uneconomic.

(iii) *Seed production.*—By an arrangement with the Welsh Plant Breeding Station, Aberystwyth, a six-acre crop of the perennial ryegrass strain S.23, originated by the Plant Breeding Station, has been grown for seed at the North-West School, Strabane. The purpose of this is to interest farmers and the seed trade in the commercial possibilities of growing special strains; to ascertain what yield may be expected from such a strain under commercial practice, to familiarize the grazier with the indigenous strain idea and to provide a nucleus from which a beginning may be made in the commercial development of such strains.

(*C*) *WEEDS.*

Further trials have been made with sodium chlorate as a weed killer for arable ground, with encouraging results. *Bracken* on sandy links was, for practical purposes, extirpated by one autumn dressing at 200 lb. of chlorate per acre. *Stinging nettle* was completely killed, in several trials, by a similar dressing, and would probably succumb to smaller dressings. *Coltsfoot* responded well to doses of about 2 cwt. per acre. *Gorse*, although at first apparently seriously injured, recovered, probably because of its great root depth.

In view of recent bio-chemical developments, trials were made with perchlorates and hypochlorites as an alternative source of chlorine. These did not succeed as well as the chlorate. Trials with a cheaper form of commercial chlorate, containing about 50 per cent. of sodium chloride, were not successful.

Duplicate comparative trials of a nitrogenous copper weedicide and of 7 per cent. green vitriol with the usual copper sulphate solution, failed to show any advantage in favour of either of the first two named. The unusually large number of cases of weeds poisoning stock has been referred to earlier in this report.

Rushes.—A comprehensive scheme of laboratory and field experiments designed by all research officers in collaboration, in an attempt to ascertain the best available method for eradicating rushes from grassland, has been put into operation. As part of this scheme, an extensive series of cutting trials has been inaugurated at the Hillsborough Research Institute. These trials are of recent inception but their appearance already suggests that as with many other weeds, the date of cutting exerts a marked influence on destructive effect. Trials of chemical and other mechanical methods of destruction are in hand.

(D) RECLAMATION.

At the instance of the Belfast Harbour Commissioners, two series of experimental plots were laid down in 1934, on land reclaimed from Belfast Lough by the deposition of "sleech" obtained in dredging operations, to explore the possibility of clothing such land with turf suitable for aerodrome purposes. The majority of ordinary species failed on account of the large amounts of salt present in the soil. The most promising results to date are from perennial ryegrass (which, however, is coarse for aerodrome use), a sea-shore variety of red fescue and a sea-shore species of Poa which grows naturally abundantly on the lough shore without sowing.

COUNTY EXPERIMENTS.

(*a*) *Lucerne.*—The majority of the experimental plots of lucerne referred to in the previous report became, during their first year, so foul that the crop was worthless and had to be ploughed up. In one or two instances where land was particularly clean, seed inoculated with root-forming bacteria produced a good crop ; in one case where circumstances were specially favourable, a yield of about 4 tons of hay at two cuts and a good third growth for grazing were obtained in the first year. This plot is still flourishing and giving two good cuts per annum but the general outcome of these trials as a whole is that for the present, even when inoculated, lucerne is not an economic proposal under Northern Ireland conditions. Without inoculation it is quite useless.

(*b*) *Ryegrass.*—Experiments referred to in the previous report, to ascertain the optimum seeding of perennial and Italian ryegrasses have been repeated. The general outcome of these to date suggests that the amounts commonly used by growers give, in general, better monetary return than larger or smaller amounts.

PROFESSIONAL ASSOCIATIONS.

The Seed Testing Station each year submitted reports to the International Seed Testing Association upon referee samples (agricultural and horticultural), circulated by the executive of the Association, and also participated in the referee work organised by the Ministry of Agriculture and Fisheries.

The Ministry's chief assistant for Seed Testing attended the Seventh International Seed Testing Association Congress at Stockholm in 1934 and presented two papers from the station reporting experimental work upon the field value of injured and broken seedlings in clovers, root crops and flax and upon suction-force experiments as a means of distinguishing varieties of ryegrasses respectively (the former in collaboration with the Official Seed Testing Station, Dublin). These papers were published in the Proceedings of the Association (2, 3). The former shows that serious injury amounting to the entire removal of the primary root may be sustained by the common clovers, turnips and flax without detriment to crop-producing capacity.

The Division was represented at a Congress of British Seed Analysts at Cambridge and presented a paper upon the purity of commercial Italian ryegrass, a resume of which has been published (1). The Head of the Division has served upon a technical advisory committee for the Ministry of Agriculture and Fisheries.

Plant Diseases.

ADVISORY SERVICE.

The demands for advisory service in 1923 amounted to 73 cases. In each succeeding year this demand has increased to such an extent that in 1931, 207 cases were dealt with, in 1932, 240 cases and in 1933, 311 cases. The specimens and inquiries received generally concerned the usual agricultural and horticultural crops.

Research.—In general, most attention has been paid to the field aspect of the various problems with which the department has been concerned. The facilities granted by the Trustees of the Agricultural Research Institute, Hillsborough, have simplified field experimental work very considerably. The necessary laboratory work in connection with these various problems has been carried out when and where possible. The following problems have been under consideration.

POTATO:

Blight (*Phytophthora infestans*).

In order to get some measure of the varietal susceptibility of recently introduced varieties of the potato, plots of the more promising of these have been planted each year, together with plots of popular varieties in general cultivation. Wide variation in susceptibility has been found to occur.

In the prevention of Blight by fungicides, closely controlled tests have been carried out at the Agricultural Research Institute, Hillsborough, and general tests throughout Northern Ireland. The results in general indicate that, with the various fungicides available, wet spraying is more successful than dry spraying (dusting), and that none of the recently introduced proprietary preparations offer any advance on the popular Burgundy mixture (copper sulphate and washing soda).

Pink Rot (*Phytophthora erythroseptica*).

Five years' investigational work dealing with the field aspect of this disease have been concluded and the results published (6). Laboratory work on this disease is stillin progress, and it is hoped to publish the results of this work in the near future.

Generally it has been shown that the causal organism is widespread and that pink rot, although generally recognised as a field disease, may be quite as serious as a storage disease. That the attack of the mother tubers at the time of planting may cause "misses" to occur in the crop and also result in the occurrence of the "pink rot wilt" stage of the disease, has also been shown. The modes of perennation of the fungus and transmission of the disease have been studied. In the course of an investigation of varietal susceptibility it has been shown that none of the potato varieties examined can be classed as very resistant. Control measures should be focussed on (a) the use of well sprouted "seed," (b) the efficient drainage of the soil, (c) the avoidance of delayed digging, and (d) the construction of well ventilated clamps, the tubers being first covered with a layer of rushes or herbage and not allowed to make direct contact with the soil used for covering. The debris of the dead haulms of a previous crop is believed to constitute a major factor in assisting the perennation of the fungus and this, coupled with a short rotation, is believed to be the cause of the disease occurring in epidemic form, especially in wet seasons. Although *Phytophthora erythroseptica* normally causes this disease, it has been shown that several other species of *Phytophthora* may also be causal agents. One such species, *Phytophthora megasperma* was isolated from an affected tuber. A study of the pathogenicity of this species was made and the results published (7).

Common Scab (*Actinomyces scabies*).

In 1932 preliminary experiments were carried out on the possibility of, and benefits likely to be derived from, the disinfection of "seed" potato tubers against this very common disease. Successful positive results were obtained and as a consequence it was possible in 1933 to arrange and carry out a comprehensive series of tests in which the various aspects of the problem were investigated. The results so far have indicated that even tubers very severely affected with common scab can be so effectively sterilized that when they are planted the resultant crop is practically free from the trouble. It has been arranged to continue this investigation in 1934, after which it should be possible to come to some definite conclusions on the merits and demerits of tuber disinfection and sterilization.

Corky or Powdery Scab (*Spongospora subterranea*).

Skin Spot (*Oospora pustulans*).

Investigations on the sterilization and disinfection of potato tubers against these two diseases were commenced in 1933.

OATS.

Seed-borne diseases.

The results obtained during the three seasons 1929-31 from the general seed disinfection experiments at the Agricultural Research Institute, Hillsborough, have

been published (8). Since then this work has been continued with the object of determining the *modus operandi* of the seed disinfectant. Trials have also been carried out to compare the efficacy of the various available seed disinfectants.

In 1932 and 1933 tests were carried out in collaboration with the County Instructors in Agriculture in order to collect information on the effectiveness of seed sterilization in Northern Ireland in general. After tests for at least a further season, it should be possible to come to definite conclusions on the advisability of general seed disinfection.

Grey Leaf (*non-parasitic disease*).

Experiments on the control of this disease were laid down in 1931 and 1932. However, in the two seasons the almost complete absence of this disease precluded the recording of indicative results from the experiments. No further work on this problem was carried out in 1933.

FLAX:

Seed-borne diseases.

Further experiments carried out in 1931 and 1932 to determine the effect of disinfection of flax seed for the prevention of crop attack by seed-borne diseases have not given results in favour of such disinfection. These results are believed to be due, in part, to the favourable weather conditions prevailing during the sowing periods of the two seasons and also of the lengthened crop rotation which has been a natural result of the big decline in the flax acreage.

SWEDES:

Seed-borne diseases.

Experiments begun in 1933 to investigate the benefits, if any, to be derived from seed disinfection, are in progress.

Club-Root (*Plasmodiophora Brassicae*).

Work in 1931 and 1932 has shown that immediate and very satisfactory control of this disease can be brought about through partial sterilization of the soil by compounds of mercury. Mercuric chloride at a concentration of 0.1 per cent. was most satisfactory (9). The use of this solution permits normal crops of broccoli, etc., to be grown on soil highly contaminated with the parasite.

While the effect of lime on this disease is more thorough, it is unsatisfactory in that it is relatively very slow in action.

GOOSEBERRY:

Rust (*Puccinia caricis*).

After preliminary experiments a comprehensive investigation of this disease was commenced in 1932. This work involves the problems of alternate hosts, on which the disease over-winters, varietal and specific susceptibility of the gooseberry to the disease and fungicidal control. The results from the use of fungicides have been very promising and indicate a very easy means of control.

APPLES:

Scab (*Venturia inæqualis*).

In each of the three years, Ulster apple orchards have been freer from this disease than in any year since the commencement of this work. Spraying was thoroughly carried out all over the Province and growers in general have been rewarded by harvests of clean crops of fruit of excellent quality. A comparative spraying trial, designed to run for at least three seasons, was laid down in 1931 with the object of comparing the value of Bordeaux mixture, as used at present, with a proprietary colloidal copper compound and with colloidal sulphur.

In collaboration with the County Instructors in Horticulture, a series of apple manurial trials designed on the basis of the results obtained during the previous three years from the Dunadry experiments was arranged. It is intended that these trials still run for a period of years. Very promising results were obtained in almost every case in 1932 and 1933. The complete analysis of the soil of the Dunadry orchard, undertaken by the Chemical Research Division, has added further confirmation to the results obtained by observation over a period of years. Collaboration with the Department of Botany, Imperial College of Science and Technology, London, was arranged, and in each of the three seasons, representative samples of the fruit from the various manurial plots was submitted to London for examination.

The whole of the experimental work which has been carried out during the past ten years has been conducted in commercial orchards and results far exceeding expectations have been obtained. There is, however, a limit to the type and scope of the work which can be carried out under such conditions and this limit is being reached. The work which has been done has not only shown how the results of modern research may be applied and put to successful and profitable use by the farmer, but it has indicated the possibilities of further research, and has opened up an avenue of problems which could undoubtedly be tackled with success were facilities afforded.

STRAWBERRY:

Leather Rot (*Phytophthora spp.*)

This disease was recorded in Northern Ireland for the first time in 1931, there being two outbreaks—one in Armagh and one in Londonderry. Since these, no further records of the disease have been obtained.

A study of the identity and parasitism of the species of *Phytophthora* concerned in this disease was commenced in 1931, but owing to pressure of other work this has not yet been completed.

ROSE:

Rust. (*Phragmidium mucronatum*).

Comprehensive experiments on the control of rose rust by fungicides were commenced in 1931. Generally speaking, very successful control was given by certain of the fungicides used. The results of this work were published in 1932 (10).

Black Spot and Mildew.

Experiments on the control of these diseases have been commenced.

TOMATO:

Leaf Mould (*Cladosporium fulvum*).

In collaboration with the Horticultural Division of the Ministry, various fungicides have been tried for the prevention of this very common disease. Observations on the incidence of the disease under the general conditions of tomato culture in Northern Ireland have been made. The results of this work have been conflicting to some extent and do not yet permit definite conclusions.

FOREST TREE DISEASES:

The Control of diseases and weeds in a forest nursery.

Further experiments have been carried out in order to compare the treatment of nursery seed beds with aluminium sulphate, with the sulphuric acid treatment in present use.

SURVEY OF THE FUNGI OCCURRING IN NORTHERN IRELAND.

Since the last publication of a list of additions to the fungus flora of Ulster (11), the presence of many other species of fungi has been recorded by the Department. Several of these species have not been noted in Ireland before and two constitute new British records. The number is sufficiently great, over 200, to warrant the publication of a second list—which, it is hoped, can be done in 1934.

Economic Entomology.

ADVISORY SERVICE.

The volume of advisory work has continued to expand, an increase being particularly noticeable in the number of enquiries relating to Acarine Disease of bees. During the year ending 30th September, 1934, 115 samples of bees were submitted for examination, in 60 of which the presence of Acarine Disease was confirmed. Interest in this direction was evidently stimulated by the issue, for the first time, in April, 1934, of an Advisory Leaflet on the nature and control of the disease and by the Educational Exhibits staged at the Agricultural Shows.

RESEARCH.

Apple Trees: Control of Capsid Bugs.

Nicotine v. Nicotine sulphate.—The spraying experiment referred to in the previous report was repeated on similar lines in 1932. Six fluid ounces of nicotine added to 40 gallons of Bordeaux mixture (2 : 6 : 40) were compared with eight ounces

of nicotine sulphate to 40 gallons of the same strength Bordeaux mixture. Both these mixtures were applied at a pressure of 300 lb. per square inch. As in previous years, the nicotine gave slightly better control of capsid bugs than the nicotine sulphate, but the superiority of the former over the latter is not sufficient to justify the extra cost incurred by its use. Both mixtures were equally effective, however, in controlling an attack of Apple Aphides which had developed prior to spraying. The crop on the sprayed trees averaged 71 lb. per tree, while trees which were not sprayed yielded on the average less than 4 lb. per tree. It is concluded from the results of this experiment, which is now completed, that 8 oz. nicotine sulphate per 40 gallons of Bordeaux mixture are practically as efficient in controlling capsid bugs as are 6 oz. of nicotine in a similar quantity of the mixture.

Mineral Oils.—The promising results obtained in 1931 by the use of certain emulsified mineral oils suggested that it was desirable to investigate further the value of these for the control of capsid bugs. Accordingly two orchards which had been badly attacked in 1931 were selected in 1932, and a comprehensive series of tests was carried out. In one orchard, which consisted of the variety Bramley's Seedling, a proprietary emulsified mineral oil was applied to a certain number of trees at 5 per cent. strength, and to a similar number at 10 per cent. strength. Half the trees so treated received during the summer five applications of Bordeaux mixture, the first three of which contained nicotine sulphate at the rate of 8 oz. per 40 gallons of Bordeaux. Other trees received no mineral oil but got Bordeaux mixture and nicotine, while certain other trees received neither mineral oil nor Bordeaux mixture and nicotine.

There was no apparent difference between the results obtained from the two strengths of mineral oil. Both gave good control of the pest and the application of nicotine sulphate (in the Bordeaux mixture) in addition did not apparently increase the measure of control. The fruit from the trees not sprayed with mineral oil or nicotine sulphate was very seriously damaged by capsids, but the applications of nicotine sulphate in Bordeaux mixture proved fairly successful. In the second orchard, which consisted of the variety Lane's Prince Albert, tests comparing three different brands of mineral oil were carried out. Each of the plots sprayed with the separate brands of mineral oil was divided into two : one half was sprayed four times during the summer with Bordeaux mixture only, the other half received Bordeaux mixture plus 8 oz. nicotine sulphate for each 40 gallons. Further plots of trees were left unsprayed as controls. While all three brands gave some measure of control, one of them was outstanding in this respect. Here again no appreciable benefit followed the application of Bordeaux-nicotine sulphate sprays on those trees which had already received the mineral oil. The fruit from the control plots was useless and could not be marketed.

These experiments were continued in 1933 and 1934 and as a result it has been established that very satisfactory control of Capsid Bugs can be obtained by the use of certain of these mineral oil sprays. Arising out of these investigations it is clear that correct timing of application of the oils is of vital importance. Spraying should be carried out immediately after the buds have burst, and to avoid spray damage, should be completed before the leaves have commenced to separate.

Combination sprays containing both mineral oil and tar distillate, which were applied while the buds were still dormant, also gave good results. Almost complete control of the pests was obtained by a " delayed-dormant " spray with mineral oil emulsion followed by three applications of nicotine in the summer.

Grease Banding.—Reports from various workers suggest that it is possible to make the control of capsids by spraying more effective by grease banding the trees before spraying begins so that the (immature) bugs which fall off during spraying are caught as they ascend the trees. This was tested in the season of 1932 and although an examination of the grease bands showed that a number of bugs were caught in them, there was no significant difference in the proportion of fruit free from capsid blemish produced by the banded trees as compared with that from the trees which were not grease banded.

Red Spider (*Oligonychus ulmi*).

Outbreaks of this pest have been of spasmodic occurrence and although experiments for its control were planned in orchards that had experienced its ravages in the

previous year the mite either failed to appear or was only evident late in the season. Petroleum oil emulsions were applied alone and were also incorporated with the "pre-pinking" application of the fungicide, Bordeaux mixture. In each case, some measure of control was effected, but the results were not sufficiently consistent to justify any recommendations. Lime sulphur, Colloidal sulphur and sulphur dust were also tested as summer treatments but, although Red Spider was checked, the foliage and fruit-injury which resulted in some cases diminished the value of these measures.

BLACK CURRANTS.

Big Bud Mite (Eriophyes ribis).

In previous years this pest has been held in check successfully by spraying with various forms of sulphur, but the severity of the resultant spray injury warranted the discontinuance of such measures. Experiments in County Antrim and County Down have led to a more promising line of investigation. High grade emulsified petroleum oils and combinations of these with lime sulphur have been tested at different concentrations and foliage-injury has been considerably reduced by the use of this type of spray.

Intimately associated with the Mite problem is the disease, known as "Reversion" (Nettle Leaf) of Black Currants. This insidious disease has been responsible for the complete failure of many plantations and, since the Big Bud Mite is believed to be the chief agency by which it is spread, an experiment has been started in County Antrim in an attempt to reduce the incidence of the disease on young disease-free bushes by rigorous control measures directed against the Mite.

CARROTS.

Carrot Fly (sila rosae).

The carrot fly, which wiped out completely several crops of carrots in 1933, was not so serious in 1934, but treated plots still showed a great improvement over untreated plots, in which a large percentage of the roots were "cankered" by the fly larvae. In an experiment in County Down, a number of deterrent substances were tested, and of these naphthalene in eight applications gave the most satisfactory control of the fly.

OATS.

Frit Fly (Oscinella frit).

This pest has been the cause of considerable injury to the oat crop, both in the braird and flowering stage. An experiment has therefore been designed to determine how far this insect is responsible for failure in oats. In this respect, the results of the 1934 experiment confirm the findings of 1933 and demonstrate clearly that Frit Fly is an important factor. Investigations carried out at the Agricultural Research Institute Hillsborough, show that the degree of Frit Fly infestation varies according to the date of sowing. Plots sown on May 5th, had 17 per cent. of the tillers and 9 per cent. of the grain destroyed by Frit Fly larvae as compared with 2 per cent. and 1.5 per cent. respectively in plots sown a month earlier; there was also a corresponding lowering in yield in the later sown plots. It was evident from the results that early sowing is the best means of checking Frit Fly attack.

TURNIPS.

Flea Beetles (Phyllotreta spp.)

These insects have been particularly serious during the summers of 1933 and 1934. In several instances, land drilled with turnips and swedes was obliged to be resown two or three times. In experimental plots at the Agricultural Research Institute, Hillsborough, seed-treatment in various forms, although having no adverse effect on germination, failed to control the pests.

DEMONSTRATIONS.

With the assistance of the County Instructor in Horticulture, public demonstrations were given in orchards in County Armagh where experiments are in progress. At the Spring and Autumn Shows of the Royal Ulster Agricultural Society and at the Chrysanthemum Show of the Ulster Horticultural Society, educational exhibits, dealing with the control of Apple, Vegetable and Glasshouse pests, the Ox Warble Fly and Acarine Disease of Bees, were staged.

Teaching.

All senior officers of the Division conduct classes in the department of Agricultural Botany in the Queen's University of Belfast.

A research scholarship for the maintenance of a post-graduate student, has been presented to theUniversity by a firm of manufacturers of agricultural and other chemical products for the purpose of phytopathological research. Negotiations in connection with this gift were conducted through the Deputy Head of the Division in charge of the Plant Disease section.

EXTRA-MURAL LECTURES:

Addresses were given to numerous seed, agricultural and horticultural trade associations and to branches of the Ulster Farmers' Union, as well as a number of public lectures under the auspices of other authorities.

All senior officers participated in the Ministry's series of seasonal advisory talks to farmers through the British Broadcasting Corporation.

AGRICULTURAL SHOWS:

Exhibits illustrating some of the work in progress and results obtained have been staged each year at the Spring shows of the Royal Ulster Agricultural Society and the Autumn show of the Royal Ulster Horticultural Society.

Publications.

1.—"Purity of British Commercial Italian Ryegrasses." Linehan, P. A. and Mercer, S. P.
Résumé circulated with Seed Analysts' Bulletin No. 21, November, 1932. Ministry of Agriculture and Fisheries, 10 Whitehall Place, London, S.W.1.

2.—"On the Evaluation of Broken Seedlings which produced Adventitious Roots during a Germination Test."—Lafferty, H. A., Mercer, S. P., and Linehan, P.A.
Proceedings of the International Seed Testing Association, 1934.

3.—"Note on the Technique of the Buchinger Method of determining 'suction-force.'"—Kirkwood, F. R., and Mercer, S. P.
Proc. Intern. S. T. Association, 1934.

4.—"Fluorescence of *Lolium* seedlings in Ultra Violet Light."—Linehan, P. A., and Mercer, S. P.
Nature, Volume 131, p. 202, Feb. 11, 1933.

5.—"The Varietal Purity of Commercial Italian Ryegrasses."—Linehan, P. A., and Mercer, S. P.
Proceedings of the International Seed Testing Association No. 2, 1932.

6.—"Pink Rot of the Potato."—Cairns, H., and Muskett, A. E.
Annals of Applied Biology. Vol. XX, No. 3, 1933.

7. "*Phytophthora megasperma* causing Pink Rot of the Potato."—Cairns, H., and Muskett, A. E.
Nature, Vol. 131, p. 277, Feb., 1933.

8.—"The Effect of Seed Disinfection upon the Oat Crop in Northern Ireland."—Muskett, A. E., and Cairns, H.
Annals of Applied Biology. Volume XIX, 1932, pp. 462-474.

9.—"The Control of Finger and Toe of Broccoli in County Down."—Baillie, D. W., and Muskett, A. E.
Journal of Min. Agr., Volume IV.

10.—"Diseases of the Rose—The Control of Rose Rust by Summer Spraying."—Muskett, A. E., and Taylor, J. C.
The Rose Annual, 1933.

11.—"Contributions to the Fungus Flora of Ulster."—Muskett, A. E., Carrothers, E. N., and Cairns, H.
Proceedings Royal Irish Academy, Vol. XL., Sec. B., 2.

PLANT BREEDING DIVISION.

Oats.

Since the last report submitted further large scale trials have definitely established the usefulness of Stormont Arrow, more particularly in Counties Down and Armagh, and the popular demand for seed supplies of this variety fully bear out this conclusion.

A new variety, selected at Stormont from the cross Potato-Sandy and named Stormont Kern, has been included in the series of variety trials for poorer cultural conditions. Many of the results have been exceedingly favourable, and present indications are that the new strain will supplant Poland, rather than Sandy or Tyrone Tawny, in such conditions. If this view proves correct Stormont Kern will be most useful as there are very considerable areas in which Poland has hitherto been the most profitable variety. Its late-ripening habit, however, always entailed a certain risk of loss which the substitution of this much earlier ripening type would dissipate.

In the period under review 133 cwt. of seed of 17 varieties has been supplied by the Division for use in county variety trials. In addition 500 cwt. of pure seed of 14 varieties was issued to selected farmers to create sources of supply at reasonable prices in all districts. It is of interest to note that in the spring of 1934 applications received for supplies of Stormont Arrow totalled nearly three times the amount available. In view of this the varieties under propagation have been renewed, and the less important types reduced in amount in order to increase in future the quantities available of the new types Stormont Arrow, Stormont Kern and Stormont Tawny.

Flax.

Since the last report issued large scale variety trials have been continued each year. The results of the 1934 trials are not yet available but the tests of 1930–1933 indicate very clearly the worth of Stormont Gossamer and Stormont Cirrus. Twenty-three trials have been conducted in this period, and the average crop value per acre of these varieties over the series is £19 : 14 : 0, as compared with £16 : 6 : 6 for J.W.S., and £12 : 18 : 6 for ordinary non-pure-line, commercial, sorts.

It is of interest to analyse this remarkable improvement in crop value which actually amounts to a 52 per cent. increase over ordinary commercial types. This percentage increase is made up of an 18 per cent. increase in straw yield, a 24 per cent. increase in fibre content, and a 9 per cent. improvement in fibre quality as indicated by selling value.

The total increase of 26 per cent. in crop value shown by J.W.S. can be apportioned similarly as follows :—19 per cent. increase in straw yield, 3 per cent. increase in fibre content, and 4 per cent. improvement in fibre quality.

Obviously, a yield increase due mainly to increased fibre content is economically far more valuable than an equivalent increase due merely to greater bulk, even apart from the fact that greater bulk in flax usually entails greater height and therefore increased liability to lodging.

Here, of a total percentage increase in yield of 43 per cent., only 18 per cent. is due to bulk increase, as compared with a 19 per cent. bulk increase in J.W.S. in a total percentage increase in yield of only 22 per cent.

Seed propagation operations in England have been uniformly successful since their inception. The rate of multiplication over the period reported on has averaged 12.6 and the yield of cleaned seed per acre almost 43 stones.

As a consequence of these high yields there has been a surplus over both Canadian requirements under the propagation scheme and the requirements of the system of trials. Such seed has been freed for distribution over the flax growing areas on the lines of the seed oat distribution scheme. In all over 100 cwt. of seed, mainly Gossamer and Cirrus, has been disposed of in this way with completely satisfactory results. Indeed, the demand engendered amongst the growers by this preliminary experience of the new varieties has been embarrassing in the extent to which it has exceeded the supplies as yet received from Canada.

The arrival of the first Canadian grown stocks of seed in the Spring 1933 marked the attainment of full development of the scheme of propagation. Henceforward

Canadian grown seed supplies should be available annually, their purity being constantly maintained by the 1 ton parent stocks sent from Stormont each year. If the present demand for such seed continues it is certain that every effort will be made by Canadian seed producers to meet it.

VETERINARY RESEARCH DIVISION.

The salient feature in this division is the steady expansion of the work in all departments. This indicates that a greater use is being made of the facilities provided by the laboratory. The growth of the poultry and pig industries undoubtedly has contributed to this increased work.

Spahlinger Experiment.

This experiment, which may be considered as a preliminary experiment, has now been completed and the final report has been published. This report indicates that a high degree of immunity or resistance was conferred on the vaccinated animals by Mr. Spahlinger's new dead vaccine. The immunity or resistance was tested by giving the vaccinated animals a massive dose of virulent tubercle bacilli intravenously. This method of testing the vaccine was adopted at Mr. Spahlinger's own request. He desired that the test dose would be sufficient to kill the control animals in from one to two months. Actually, five out of the seven controls or unvaccinated animals, died in an average time of forty-three days. In our opinion, this test was altogether too drastic, but the success which has attended it, affords high hopes that animals injected with this vaccine will be able to resist completely natural infection. Plans for an experiment under conditions simulating an intensive natural infection are in course of preparation.

Poultry Diseases.

During 1931-32, 2,643 specimens were examined—an increase of over 1,000 specimens on the 1930-1931 figures. In 1932–33, 2,506 specimens were examined. In 1933–34, 2,837 specimens were examined.

Bacillary White Diarrhoea—Blood Testing.

The fact that there is a growing demand for a properly supervised system of blood-testing is an indication that our Ulster farmer is determined to use and sell only eggs which can be guaranteed safe. The County Committee's of Agriculture's policy of compulsory blood testing of all egg stations has done much to educate the poultry farmer. The consistently good results from the county egg stations have encouraged up-to-date private breeders to blood test their breeding stock.

The numbers of samples tested in				1931–32 was	96,683.
,,	,,	,,	,,	1932–33 ,,	121,651.
,,	,,	,,	,,	1933–34 ,,	155,105.

Poultry farmers will note that all important vendors of hatching eggs and day-old chicks are now advertising their stock as blood tested. Buyers should realise the importance of investigating the authenticity of these claims before making purchases.

In this connection a register of accredited farms has been suggested. Should this suggestion materialize it should be noted that only farms blood tested under the Ministry's scheme will be recognised.

SOURCE OF HATCHING EGGS.

Incredible, as it may seem, there is still a reluctance on the part of farmers to inform the division as to the source of hatching eggs. Without this information advice and assistance cannot be given and the farm in question may continue to spread disease.

ROUP OR FOWL POX.

This disease is probably the most serious disease of adult fowl in this area. The value of vaccination as a means of prevention is gradually being appreciated and more and more farmers are resorting to it. During the last two years over 25,000 doses of vaccine have been supplied through the Division against this disease.

INTESTINAL PARASITES.

Intestinal worms and Coccidiosis constitute a very serious problem. They appear to be closely associated with the factors responsible for the disease known

as Fowl Paralysis. Treatment is most unsatisfactory, and prevention should be aimed at. It would almost appear that birds which have been reared intensively are much more susceptible to the effects of these parasites should they be exposed to infection in later life. Overcrowding is also an important contributory factor. Unfortunately, almost all the poultry houses erected in Northern Ireland are of the permanent or fixed type—this means that the same run is being used year after year, and when one sees the state the ground is in after even only a few months of intensive stocking it can readily be realised why losses occur.

It is highly important that birds which are being reared intensively should be put on clean ground and every precaution should be taken to prevent the introduction of infection to that ground. On no account should older birds be transferred to it no matter how healthy they look. They may easily introduce worms and nullify all the precautions taken.

BLACKHEAD.

Good results in the treatment of this disease with an arsenical preparation supplied by the Division are reported by the poultry instructors. The importance of healthy parents and clean ground as means of prevention cannot be over estimated.

In 1933 two outbreaks of Fowl Cholera were confirmed. One of these occurred in imported hens. The second outbreak occurred in a flock of turkeys. The source of infection was not discovered. A single outbreak occurred in 1934. The occurrence of Bacillary White Diarrhoea disease was confirmed in turkeys on several occasions.

Pig Diseases.

During 1932-33, 29 Post-mortem Examinations were onducted on pigs as compared with 138 in 1933-34. Anaemia, Swine Erysipelas, Worms and Nicrotic Enteritis were the principal problems investigated. Good results followed the use of Swine Erysipelas anti-sera and vaccines.

A peculiar disease was encountered in the spring time of 1934. It occurred shortly after weaning in pigs about 10-12 weeks old. The pigs appeared in good health and were either found dead or showing symptoms of paralysis death occurring a short time after the symptoms were first noticed (usually in from 10–12 hours). The paralysis was of a progressive nature involving the hind quarters first and gradually extending. Puffiness around the eyes was remarked by several owners. The mortality was in the region of 20 to 25 per cent. Purgation, change of diet, and the use of cod liver oil appeared to prevent further cases from occurring. Should further cases occur it is hoped to investigate fully the nature of the disease.

Bovine Abortion.

This is a world wide problem and reports indicate that it is very prevalent in this area. Farmers are again urged to seek professional advice immediately after the first abortion and not to wait until the disease has become widespread. in their herds. Too often the first abortion is attributed to some injury or accident. The history of the many outbreaks brought to the notice of the laboratory is with monotonous regularity, identical —the introduction of the infection being ascribed to a new purchase. Despite this important fact few farmers provide isolation houses for new purchases. With the contemplated improvements in housing engendered by the Milk and Milk Products Bill the value of a proper isolation byre cannot be over emphasised. When one realises the number of serious diseases that a new purchase may introduce, e.g., Tuberculosis, Contagious Abortion, Hoose and other parasitic diseases, Mastitis or Felon, etc., etc., its need becomes imperative.

Experiments are being conducted with a new type of dead vaccine. A freshly isolated virulent culture grown on amniotic fluid as an enrichment medium is used in the preparation of this vaccine. Owners who are willing to allow a number of their animals to be vaccinated leaving a number unvaccinated for control purposes are invited to communicate with the laboratory at once. The vaccine will be supplied and vaccination will be carried out free of charge. The name of the owner's veterinary surgeon should be given so that he can be supplied with full details of the proposed experiment. This work is being held up for lack of herds, and this despite the fact that abortion disease is widespread.

In connection with the diagnosis of contagious abortion 1,961 blood samples were tested during the period covered by this report.

Sheep.

Serious losses on sheep grazing farms occurred during 1932-33-34. Post-mortem examination of dead specimens on affected farms indicated that the cause of the trouble was parasitic gastritis. Several species of worms were involved but the most common and serious invader was Haemonchus contortus. Treatment with a 1 per cent. solution of Copper Sulphate has given good results. Thirty-eight post-mortem examinations were conducted in the course of these investigations.

Parasitic troubles in cattle were also increasingly prevalent during this period and several factors are probably associated (1) Old or permanent pastures are undoubtedly the chief cause of the trouble. The poor prices obtainable for agricultural produce have thrown many farms out of crop rotation (on highly cultivated farms parasitic diseases are almost unknown). (2) The dry seasons have interfered with many water supplies, with the result that grazing animals have congregated at any supply not dried up, thus increasing the opportunities and intensifying the infection for the spread of parasitic disease. Almost 200 specimens of manure were sent in for examination during this period.

Contagious Diseases.

Anthrax.—11 suspected cases were investigated during 1931–32, two of these were confirmed. In 1932–33, 18 suspected cases were investigated, 2 of these were confirmed, 13 suspected cases were investigated during 1933–34, five of these were confirmed.

Rabies.—A number of people have confused the symptoms of canine hysteria with rabies as the various suspected cases have proved on examination to be canine hysteria.

Sheep Scab.—93 wool scrapings were examined in 1932–32. In 1933–34, 73 wool scrapings were examined. These scrapings were received during the course of the intensive eradication campaign being carried out against this disease.

Tuberculosis.—During this three-year period 826 milk samples were examined under the provision of the Bovine Tuberculosis Order, of these 82 or approximately 10 per cent. were found to contain tubercle bacilli on microscopic examination.

Educational.

During the academic year two afternoons each week are devoted by a member of the staff to lecturing to students in the Faculty of Agriculture in the Queen's University of Belfast. Some 48 lectures were given during this period to Poultry Clubs, Young Farmers' Clubs, Branches of the Ulster Farmers' Union and Milk Recording Associations. A paper on Infectious Abortion in Cattle was read at the Belfast Congress of the Royal Institute of Public Health and a paper on Poultry Diseases Experimental Work was read at the Harper Adams Poultry Congress.

The co-operation of the County Instructors in Poultry is acknowledged with grateful thanks.

Publication.

"Infectious Abortion in Cattle."—H. G. Lamont, The Vet. Record, Aug. 20th, 1932.

"Poultry Diseases: Experimental Work."—W. R. Kerr, The Harper Adams Utility Poultry Journal, Vol. XVII, No. 11.

"Blood Testing and Egg Production."—P. L. Shanks and J. M. Gordon, The Vet. Journal, Vol. 88, No. 6.

"Report on Experiments with Mr. Henry Spahlinger's Anti-Tuberculosis Vaccine."—H. G. L., W. R. K., and P. L. S., The Vet. Record, Dec. 17th, 1932.

Vaccines Supplied.

	No. of Doses 1931-32.	No. of Doses 1932-33.	No. of Doses 1933-34.
Abortion Vaccine	531	467	1,725
Fowl Pox Vaccine	—	11,080	18,149

Table showing specimens examined.

	1931-32.	1932-33.	1933-34.
Poultry Post-mortems	2,535	2,319	2,687
Turkeys ,, ,, ...	99	175	137
Ducks ,, ,, ...	9	12	13
Pigs ,, ,, ...	23	29	138
Sheep ,, ,, ...	14	8	30
Cattle ,, ,, ...	4	7	8
Examinations for Worm eggs	112	89	105
Blood samples for Abortion	918	490	553
Blood samples for Bacillary White Diarrhoea	96,683	121,651	155,105
Miscellaneous Specimens	144	159	286
Milk Examinations for Tuberculosis (Positive)	27	29	26
Ditto (Negative)	287	250	207
Examinations for Sheep Scab (Positive)	17	75	64
Ditto (Negative)	5	18	9
Examinations for Anthrax (Positive)	2	2	5
Ditto (Negative)	9	16	8
Miscellaneous Examinations for Tuberculosis (Positive)	7	5	2
Ditto (Negative)	21	22	12
Total No. of specimens	100,916	125,356	159,395

POULTRY DIVISION.

The tenth egg-laying test conducted by the Ministry was held at Stormont from the 14th October, 1931, to the 13th September, 1932. A total of 155 pens, each of six pullets, competed. This was an increase of 44 pens over the previous year.

The results of the test were, on the whole, quite satisfactory. There was a slight increase in egg production the average being 183.46 eggs per bird, as compared with 183.32 for the 1930–31 test. Size of egg was below that of the previous test; 17.4 per cent. of the pens each produced more than 300 eggs below first grade as compared with 10.8 per cent. in the previous test and 17.4 per cent. in the 1929/30 test. The Rhode Island Reds and the White Leghorns were chiefly the cause of this increase in the number of small eggs. Mortality was very slightly lower than that of the previous test, but it was still much too high, and breeders have been advised to pay more attention to stamina and body size when selecting their breeding stock.

A pen of White Wyandottes, the property of a station-holder, Mrs. A. Peel, Oakleigh, Roses Lane Ends, Ballinderry, County Antrim, won (a) the Silver Cup presented by the Ministry in respect of the pen of pullets laying eggs of the highest market value during the test; (b) the Ministry's award for the pen laying first grade eggs of the highest market value during the first four periods (16 weeks); (c) the Challenge Cup offered by the Council of the Scientific Poultry Breeders' Association for the pen laying eggs of the highest market value during the first four periods (16 weeks), and (d) the prize awarded by the Ministry for the pen of the best type of White Wyandottes in the test. In addition to the above awards this pen had the distinction of producing the highest number of first grade eggs ever laid by a pen of any breed since the inception of these tests.

The Silver Medal for the best pullet in the test was won by Mrs. M. Noble, Roundpark House, Killyeramph, Lisnaskea, County Fermanagh, who was also a station-holder, and had the distinction of supplying the first champion of the White Leghorn breed in these tests.

Further particulars regarding this test will be found in the printed report.

Arrangements for the recognition of the Ministry's Egg-Laying Tests by the National Poultry Council were completed during the year.

In the demonstration experiments carried through, the test comparing the egg production from birds supplied with water in the house with that from birds given water in the run only was repeated on similar lines to the test of the previous year except that water was supplied in the run as well as in the house to the former lot of birds. No significant difference in egg production was obtained but the size of egg was somewhat better from the birds given water in the house as well as in the run.

Another test had for its object a comparison between three laying mashes containing 20 per cent., 30 per cent. and 40 per cent., bran, respectively. The mixture containing 20 per cent. bran was the standard laying test mash and in the others the proportion of pollard was reduced by an amount equivalent to the increase in bran. There was no significant difference in egg production in any of the three lots, but it was observed that the condition of the grass on the runs occupied by the high bran lots was much better during the summer than on the run in which the low bran lot was kept.

The eleventh egg-laying test conducted by the Ministry was held at Stormont, from the 12th October, 1932, to the 12th September, 1933. A total of 148 pens each of six pullets competed.

The results of the test were very satisfactory. There was a definite increase in egg production, the average for all the birds was 193.74 as compared with 183.46 for the previous test. Allowing for the death of 70 birds, the average was 200.2 eggs per bird. The rate of mortality was slightly lower, and except in the case of the White Leghorns, it was a reasonable figure.

A pen of Rhode Island Reds, the property of Mrs. G. Hegan, Annagh, Cookstown, won the silver cup presented by the Ministry in respect of the pen of pullets laying eggs of the highest market value during the test.

The Ministry's award for the pen of birds laying first grade eggs of the highest market value during the first four periods (16 weeks) of the test was awarded to a pen of White Wyandottes in the Station-holders' Section, the property of Mrs. W. Martin, Knockvale, Katesbridge, Banbridge, County Down.

The Challenge Cup offered by the Council of the Scientific Poultry Breeders' Association for the pen laying eggs of the highest market value during the first four periods (16 weeks) of the test was won by a pen of Rhode Island Reds, the property of Mrs. M. Malloy, M.B.E., Langford Lodge, Crumlin, County Antrim.

The Silver Medal for the best pullet in the test was won by Miss A. Brown, Ballyhill, Crumlin, County Antrim. A Rhode Island Red, the property of Miss E. Warnock, Tower View, Rathgael, Bangor, laid 293 eggs during the 48 weeks of the test. This pullet was retained at Stormont to complete her year, and she finished with a record of 303 eggs.

263 pullets which laid 200 or more first grade eggs, with not more than 50 eggs below first grade, were ringed with sealed copper rings supplied by the National Poultry Council. 67 of this number were entered by the owners, at the Northern Ireland Pedigree Poultry Breeding Station at Hillsborough, where they were sent direct at the termination of the test,

A detailed report of the test has been issued, from which further particulars can be ascertained.

In the demonstration experiments carried out, that comparing the varying proportions of bran in the laying mash was repeated. Three mashes, containing 20 per cent., 30 per cent., and 40 per cent. bran, respectively, were fed to similar groups of pullets, but no significant difference was observed in the egg production. A second experiment to ascertain the effect of withdrawing wet mash from the daily diet of laying pullets, after the 1st June, was carried out, and as far as could be ascertained from the results of the small groups of birds tested, there was no decrease in egg production. A third test to determine the effect of withdrawing fish meal from the wet mash after June 1st was carried out, but the results were not sufficiently conclusive to justify the formation of an opinion.

The twelfth egg-laying test conducted by the Ministry was held at Stormont from the 10th October, 1933, to 10th September, 1934. A total of 157 pens each of six pullets competed.

The results were not so satisfactory as in the previous test. There was a decrease in egg production, and a very much higher rate of mortality. The average egg production for all the birds was 181.71 as compared with 193.74 for the previous test. The mortality figure was the highest yet reached, and was the most disturbing feature of the test. In the detailed report which was issued, breeders were advised to take greater care in the selection of their breeding stock, and to select only birds which are of good size and in every other way typical of the breed.

The Ministry's award in respect of the pen of birds laying first grade eggs of the highest market value during the first four periods (16 weeks) of the test was won by a pen of Light Sussex, the property of Mrs. H. W. Merrick, Agivey House, Aghadowey, County Derry. This was the first time since the inception of the test that a pen of birds of the Light Sussex breed won this award. The Challenge Cup offered by the Council of the Scientific Poultry Breeders' Association was also won by the same breeder with the pen named.

Two pullets, a Rhode Island Red, the property of Mrs. R. A. Abernethy Cherry Hill, Stewartstown, County Tyrone, and a White Wyandotte, the property of Mrs. A. Drummond, Ballyharvey House, Muckamore, County Antrim, tied for the silver medal which is awarded to the pullet laying eggs of the highest market value during the test ; and a silver medal was awarded in respect of each pullet.

The demonstration experiments which were carried out in previous years were discontinued.

The following table shows the number of pens from each county entered in the test for the past twelve years :—

	1922-23 pens.	1923-24 pens.	1924-25 pens.	1925-26 pens.	1926-27 pens.	1927-28 pens.	1928-29 pens.	1929-30 pens.	1930-31 pens.	1931-32 pens.	1932-33 pens.	1933-34 pens.
Antrim ..	3	16	17	11	13	22	20	22	24	27	43	45
Armagh ..	9	12	19	19	10	10	9	8	6	14	10	13
Down ..	23	34	24	29	24	32	42	33	35	49	45	46
Fermanagh	1	2	2	2	4	5	6	4	4	10	6	10
Londonderry ..	3	2	3	2	5	10	10	13	12	15	14	16
Tyrone ..	6	5	7	8	16	12	14	23	30	40	30	27
Totals .	45	71	72	71	72	91	101	103	111	155	148	157

Particulars of eggs laid, value of eggs, cost of food, and gross return over cost of food in respect of the twelve tests already carried out by the Ministry are given below :—

48 weeks ended	No. of pullets penned.	No. of eggs laid.	Average No. of eggs per bird.	Average value of eggs per bird.*	Cost of food per bird.*	Gross return per bird over cost of food.*
				s. d.	s. d.	s. s.
16th Sept., 1923	270	51,025	188.98	32 7	9 10	22 9
15th ,, 1924	426	77,383	181.6	33 0	9 10	23 2
16th ,, 1925	432	78,565	181.6	31 11	10 2	21 9
16th ,, 1926	426	80,798	189.66	30 7	10 2	20 5
16th ,, 1927	432	81,732	189.19	26 9	10 2	16 7
15th ,, 1928	546	100,378	183.84	26 4	10 2	16 9
16th ,, 1929	606	109,970	181.47	27 9	11 0	18 6
16th ,, 1930	618	112,418	182.0	27 7	9 1	18 6
15th ,, 1931	666	121,426	182.32	22 11	7 1	15 10
13th ,, 1932	930	170,623	183.46	18 2	6 9	11 5
12th ,, 1933	888	172,048	193.74	18 4	6 3	12 1
10th ,, 1934	942	171,184	181.71	16 10	5 3	11 7

*Calculated to the nearest penny.

Publications.

Report on Egg-Laying Test 1931–32.
,, ,, ,, 1932–33.
,, ,, ,, 1933–34.

CROP AND ANIMAL HUSBANDRY DIVISION.

Teaching.

The division has been responsible for the teaching work in Crop Husbandry, Animal Husbandry and Farm Management in the Faculty of Agriculture of the Queen's University of Belfast. In addition to lectures in the University the students have attended field and livestock demonstrations held each year during the summer term at the farm of the Agricultural Research Institute, and at other farms in the Province. These farm demonstrations are of great value and give the students an opportunity of studying the practical application of scientific principles.

In order that students may have an opportunity of studying the work carried out at Agricultural Colleges and Research Institutes as well as farm practice, other than that to which they are accustomed in the Province, a tour of a week's duration in England is organised and carried out every alternate year. These tours were held in July 1932, and in June 1934, and were attended in each year by the third and fourth year students and by one or two former students.

Several evening lectures have been given to branches of the Ulster Farmers' Union, Milk Recording Associations and Young Farmers' Clubs.

Advisory Work.

Each year has shown an increase in the number of enquiries from farmers asking for advice on problems, such as renovation of pastures, feeding and management of stock, drainage, etc.

During the last year there has been a notable increase in the number of enquiries relating to the erection of new buildings or the reconstruction of existing buildings, particularly in connection with pig houses and cow byres.

A leaflet has been prepared on the construction of pig houses suitable for the average farm in Northern Ireland, and reprints are available of an article which has been published on the construction of the piggeries at the Agricultural Research Institute.

All enquiries have been dealt with by letter, and where necessary a visit has been paid to the farm.

The head of the division has continued to act as the Ministry's representative on the Executive Committee of the Young Farmers' Clubs in Ulster. A rally of all Clubs has been held each year during the summer at the Agricultural Research Institute Farm, where a comprehensive programme of judging of all classes of live-stock is carried out. This annual rally has become very popular and is attended by over 400 members.

Research and Experimental Work.

Grassland Improvement.—The experiment commenced in 1929 to investigate some of the problems concerned in the management of grass land has been continued. The grazing records show that Plot 1 (Nitrogen, Phosphate, Potash) during the first year carried appreciably more stock than Plot 2 (Phosphate, Potash), or Plot 3 (Phosphate).

In the second year Plot 1 provided somewhat less grazing than in the first year, and its stock carrying capacity was practically the same as Plot 2. Plot 3 carried less stock than either Plot 1 or Plot 2. Plots 4 and 5, which were ploughed up and sown down with seeds at the beginning of the experiment, were cut for hay and cannot be compared with the others for that year.

In the third grazing year very little difference was found in the stock carrying capacity of the five plots, but a marked preference for Plots 4 and 5 was shown by the stock, especially the dairy cows. During the season these two plots appeared to be fresher, and looked much greener than the other three plots.

In the fourth year the general appearance of Plots 1, 2 and 3 was much inferior to that of Plots 4 and 5, but despite this there was again no significant difference between the five Plots as reflected by the method employed to show their stock carrying capacity. As in the previous year a marked preference for plots 4 and 5 was shown by the stock, especially the dairy cows.

Unfortunately the water supply for the field was inadequate during the prolonged dry weather of the third and fourth grazing seasons, and the stock had to be removed from all the Plots. This factor interfered with the grazing, and the figures so far obtained do not, therefore, indicate the maximum stock carrying capacity of the Plots.

Reclamation of Bog.—Thirty-one acres of bogland have been reclaimed over a period of three years by an Agricultural firm in County Armagh, and this division has been closely in touch with the work during that period. Manurial trials have been carried out by the Chemical Division. The reclaimed area has been utilised successfully for the production of "seed" potatoes, and it is interesting to note that the cost of the enterprise was recouped from the sale of the "seed" potatoes grown during the period of reclamation. An account of the work of reclamation, the results of the manurial trials, the crop yields and returns, and the cost of the whole enterprise has been published in the Ministry's Journal, Vol. 4.

Drainage.—The high labour cost entailed in land drainage is largely responsible for so little of this work being carried out. A draining machine has been manufactured by a Scottish firm of engineers which is capable of cutting a trench of from 24-inch to 30 inches deep at a reasonable speed. Arrangements were entered into with this firm, and a two-day public demonstration was held, by courtesy of the Trustees of the farm of the Agricultural Research Institute, Hillsborough. A large number of farmers attended the demonstration to view this machine, which proved to be efficient as an excavator, and performed the work expeditiously and at a cost very materially below that of hand labour. The machine was purchased by the Trustees of the Institute, and during the past three years over 70 acres have been drained. Records of cost and other details in connection with drainage have been kept.

Crop Drying.—A crop drying machine was installed at the farm of the Agricultural Research Institute, Hillsborough, in the Spring of 1932, and preliminary trials were carried out during the Summer on the artificial drying of grass, cut when ready for hay-making.

These trials demonstrated that grass can be effectively dried by this machine, but certain points about the technique to be employed to obtain a "commercial output" required further investigation. Further trials were carried out at the Institute during the summer of 1933. The first trial was carried out during very warm dry weather and the grass, from a hay field, was cut in the morning, allowed to lie all day, turned over the following morning and immediately carted to the drying machine. The second trial was carried out with grass which was cut and passed through the drying machine on the same day. Better results, as would be expected, were obtained from the first trial, as the moisture content of the grass before drying was considerably less than that of the grass in the second trial.

The results of these trials confirmed the opinion formed at the preliminary trials. The efficiency of this machine for drying is satisfactory, but the output is not sufficiently high to justify its use on an extensive scale.

Young Beef.—A study of various systems of feeding and rearing for the production of young beef has been made over a period of four years, the work having been carried out at the farm of the Agricultural Research Institute, Hillsborough. The calves used were from cross-bred Galloway cows by a pedigree white Shorthorn bull. An account of the systems adopted, the live weight increases of the calves for the various periods of their lives and detailed comparative costs of production under the different systems, have been published in the Ministry's Journal, Vol. IV.

Yield and Composition of Milk.—An investigation of data from the dairy herd of the Agricultural Research Institute, Hillsborough, has been completed and published in the Journal of Dairy Research, 111. 1932, in collaboration with the the Chemical Division. Probably the most interesting finding is that there was little or no connection between day to day variations in temperature and humidity and day to day variations in the yield and composition of milk.

Cost Accounts.—The cost accounts have been continued at the Agricultural Research Institute farm, the sixth consecutive year being completed at 31st March, 1934. The accounts have been most useful in providing costs and other data regarding the farm, especially as they have been kept continuously practically from the time the farm was taken over. Abstracts from the accounts have been used in articles on the production of young beef and on the piggeries erected at the Institute. The accounts have also been useful in providing figures for management, teaching and advisory work, the cost of draining with the mechanical excavator being particularly interesting in these respects.

General.

The Division continues to be responsible for the planning and general management of the building programme being carried out at the Agricultural Research Institute. In 1932 a start was made with the erection, by direct labour on the farm, of two large pig houses, and these were finished in little over a year. The buildings comprise—(a) farrowing house of twenty pens ; (b) fattening house of twenty pens ; (c) open concrete exercise yard situated between these two houses ; and (d) food store. The piggeries have been erected on modern lines incorporating a number of new ideas, and have been the object of great interest to farmers and others visiting the Institute. Full particulars of the design, with sketch plans, construction and costs of the piggeries have been published in the Journal of the Ministry of Agriculture and Fisheries, Vol. XLI., No. 3, June, 1934.

Visits.

A considerable amount of the time of the Division is occupied in the summer months conducting parties of farmers and others interested round the Research farm at Hillsborough, and demonstrating the experimental work being carried out there.

The number of visitors to the Institute is increasing every year, and while it absorbs a considerable amount of time it is a very desirable feature of the Division's work, and affords an opportunity for the dissemination of results of research and experimental work among those directly interested in agriculture.

Publications.

"The Reclamation of Bogland and the Production of 'Seed' Potatoes."—J. C. Baird, B.Sc., B. Agr., and R. Rae, B.Agr. Journal of the Ministry of Agriculture for Northern Ireland, Vol. IV., 1933.

"System of Rearing and Feeding for the Production of Young Beef from a Herd

of Cross-bred Galloway Cows."—R. Rae, B.Agr., and R. W. Hale, B.Sc. (Agr.). Journal of the Ministry of Agriculture for Northern Ireland, Vol. IV., 1933.

"The Yield and Composition of Milk with special reference to the Influence of Climatic Conditions and other Factors."—J. Houston, D.Sc., A.I.C., and R. W. Hale, B.Sc. (Agr.). Journal of Dairy Research 111.2.294. 1932.

"Piggeries at the Agricultural Research Institute for Northern Ireland."—R. Rae, B.Agr., Journal of the Ministry of Agriculture, Vol. XLI. No. 3 (June, 1934).

SPECIAL POTATO AND FLAX EXPERIMENTS.

Propagation of Healthy Stocks of Potatoes.

The Ministry has continued during the period under review to carry out its scheme of selecting and propagating healthy stocks of potatoes, and satisfactory progress has been made in establishing healthy stocks of most of the leading varieties.

As an outcome of this work, the crops of Arran Victory and Champion potatoes throughout the country are now mainly grown from these improved stocks, and the deteriorated stocks formerly grown have been discarded to a very large extent. Substantial progress has also been made in building up healthy stocks of Majestic and at the rate of progress that has been made, there will be adequate supplies of seed of these improved stocks in another year to meet all requirements.

In the case of Up-to-Date variety the propagation of healthy stocks is in a rather less advanced stage, but in the past season (1934), there has been almost 40 acres of crops of this variety produced which are of such a high standard of healthiness that they have qualified for listing for stock seed.

In order to test the merits of selected healthy stocks of potatoes against the farmers' unselected stocks, experiments were carried out with these two classes of Arran Victory at various centres in 1930 and 1931, and increased yields were obtained in favour of selected stocks of 3 tons 16 cwt. and 3 tons 13 cwt. per statute acre, respectively. In each of the following years experiments on similar lines have been continued, not only with Arran Victory, but with other varieties, and confirmatory results have been obtained showing the superiority in yield of selected stocks over unselected stocks.

These results afford most convincing evidence of the value of the policy of building up healthy stocks of potatoes from selected plants.

Potato Variety Trials.

These trials are carried out for the purpose of discovering new immune varieties that will in point of merit be capable of replacing the existing non-immune varieties. The principal centre for the conducting of these tests was Stormont, where an average of about 100 unnamed seedlings and a considerable number of recently introduced named varieties are included each year in the trials.

Subsidiary trials were also carried out each year at the North West School, Strabane, and at 10 to 12 centres in various parts of the Scheduled Districts for testing a few of the most promising of the named new varieties. A number of these new varieties have given satisfactory results and promise to be capable of replacing the existing non-immune varieties.

Inter-Departmental Potato Immunity Trials.

These trials are carried out at Kilkeel, Co. Down, in co-operation with the English Ministry of Agriculture and Fisheries, and the Scottish Department of Agriculture, for the purpose of testing new seedling varieties for immunity from Black Scab or Wart Disease. As a result of these tests the introduction of new varieties of potatoes is now limited to immune varieties, the raisers voluntarily agreeing to discard all susceptible varieties.

Each variety, in addition to being tested in the laboratory, has to undergo a minimum of two years' field tests before it can be officially listed as immune, In the first year the field test is limited to one centre, but in the second year this test is carried out at each of the three centres in England, Scotland and Northern Ireland.

The number of new varieties that were tested in the official trials at Kilkeel in each of the past three years, including the varieties received from the testing stations in England and Scotland, were 86 in 1932, 82 in 1933, and 66 in 1934.

Of this number only 18 proved to be susceptible.

In order to enable potato raisers to discard susceptible seedlings at an early stage of their development, the Ministry carries out preliminary immunity tests with a single tuber from each seedling. The total number of seedlings tested in this way during the past three years was 660, of which about 200 proved to be susceptible.

Flax Experiments.

In the Flax Variety Trials which were carried out annually by the Ministry since 1922, much superior results were obtained from seed of the well known pure strain variety, J.W.S., than from any of the Commercial kinds of seed, Dutch, Pernau or Riga. In the more recent years trials in 1930 and 1931, however, a number of the newer pure strain varieties, including Stormont Gossamer, Stormont Cirrus, Liral Monarch, and Liral Crown, have in turn proved distinctly superior to J.W.S. These results have been confirmed in trials which were carried out in the years 1932 and 1933 at six different centres in each year. In addition two other new pure strains, viz., Liral Dominion and Liral Sussex have also given promising results in these trials. Similar trials were again carried out in 1934 at the same number of centres, and although the results have not yet been ascertained, the appearance of the growing crops would indicate that the newer pure strains will again prove their superiority,

Bulk Propagation of Pure Strains of Flaxseed.

The propagation of pure strains of flax on a commercial scale is now mainly confined to Canada as the development of this enterprise in the other Empire countries in which it was started has not yet proved successful. In 1930 the area in Canada of J.W.S., which was then the only pure strain variety grown in that country was 1,500 acres. In the two following years the flax industry was in a most depressed condition, and the area of flax in this country declined to a very serious extent, with the result that the Canadian flax growers were unable to find a market for the whole of their seed. Under these circumstances no substantial progress was made in the propagation of pure strains of flax seed, and in the year 1934 the total area of flax of pure strains grown in Canada was only 2,100 acres. With the better prices that were obtained for flax in 1933, the demand for pure strain seed has increased and during the past season of 1934, the supply of this class of seed was very much short of requirements and the seed realised very high prices. From the reports that have been received from Canada it is believed that the stimulus that has been given to the industry by the increased demand and better prices, will lead to a substantial development in the production of pure strain flax seed, next year, in that country.

DAIRY BACTERIOLOGY DIVISION.

The work of this Division can be considered under the following headings:—(1) Routine and advisory work arising out of the Sale of Milk Act (N.I.), 1927; (2) Routine and advisory work in connection with creameries; and (3) Assistance and advice to farmers in solving troubles relating to dairy routine.

Grade A (Tuberculin Tested) Milk.

As heretofore the greater part of the time was taken up in administering the Sale of Milk Act (N.I.), 1927, in connection with the production and sale of Grade A (T.T.) Milk. Over the period under review the number of producers increased from 36 to 61 and the number of retailers from 16 to 53. It is satisfactory to report that the number of cows now under test is about 2,500, an increase of 1,000 over the period.

In connection with the control of Grade A (T.T.) Milk, the number of samples examined bacteriologically in 1931–32 was 2,382, in 1932–33, 2,582, and in 1933–34, 2,473.

A Clean Milk Competition was held each year. The rules of the Competition were altered so that all licensed producers would be competitors. Monthly reports on all samples examined were issued under code number, and prizes were awarded on the results of the year's surprise samples.

Creameries.

Work in connection with the bacteriological control of creameries was continued. As the export trade in cream has increased recently, the work of control has become an

important feature of the Division's activities. The number of samples of cream examined in 1931–32 was 109, in 1932–33, 140 and in 1933–34, 127. The water supplies of several creameries were also examined.

Miscellaneous Advisory Work.

During the period many problems were investigated for unlicensed milk producers, pasteurizing firms and veterinary surgeons. These included cases of milk taint troubles, suspected tubercular milk, and cream and butter taints. The numbers of samples examined in connection with this work were as follows :—1931-32, 138 ; 1932–33, 252, and 1933–34, 440.

During each year the usual lectures were given to Agricultural Students of The Queen's University of Belfast on General Bacteriology and the production of clean milk.

INVESTIGATIONS OF FACTORS AFFECTING EGG QUALITY.

Keeping Qualities of Eggs.

In the previous report issued by the Ministry, reference was made to an experiment conducted during the years 1930–32 by the Ministry's Egg Inspectors in co-operation with officers of the Chemical and Animal Nutrition Division to determine the factors governing the keeping qualities of eggs. This report has now been issued. Briefly, the conclusions were :—

1. differences in systems of feeding and management, such as are found on good commercial poultry farms do not affect the quality of the eggs produced to any appreciable degree ;
2. the season of the year caused the most important variation in keeping qualities ;
3. the hens' rate of production does not seem to have any effect on egg quality, but individual hens differ considerably amongst themselves in this respect ;
4. there are no differences amongst the three chief breeds of hens (viz., White Wyandotte, Rhode Island Red and White Leghorn) as regards quality of eggs when laid or as regards keeping qualities ;
5. the transportation of eggs causes serious deterioration in their internal appearance and keeping qualities, which is very much accentuated when the eggs are not packed broad-end-up.

Different Methods of Packing.

The conclusion at (5) in the previous experiment was of such importance that the Ministry's Egg Inspectors continued on a large scale investigation, with a view to the confirmation of this conclusion. The work was carried out during the year 1933 and observations were made on the eggs in transit between Northern Ireland and London. The advantages of this method of packing were fully confirmed and in addition evidence obtained seemed to suggest that the various types of pulp board used in the packing of eggs caused a variation in the rate of deterioration during the time the eggs were contained in the packages.

These facts in turn gave rise to further investigation during 1934.

ULSTER DAIRY SCHOOL FARM.

Very few changes have been made in the general system of management of this farm during the period under review. Details of this system will be found on pages 56 and 57 of 10th Annual Report.

The dairy herd of about 45 cows is maintained with the object of providing practical instruction for the students. This herd is being graded up for milk production by the continual use of pure bred shorthorn sires from high yielding dams. The herd of pigs consists now entirely of pure bred Large Whites (Yorks) almost all of which are entered in the National Pig Breeders' Association Herd Book, London. The few which are not entered in the National Pig Breeders' Association Herd Book are registered as heretofore in the Irish Large White Herd Book, Dublin. There is an increased demand for pigs entered in the N.P.B.A. Herd Book.

The number of sows has been increased by about 50 per cent. Young boars and gilts, which are of a sufficiently high standard, are either retained for breeding in the herd or are sold for breeding purposes to farmers. The boars are mostly purchased by holders of premiums from County Committees of Agriculture.

There have been no material changes in the Crop Rotations. In the potato section the new varieties, Arran Cairn, Ballydoon and Dunbar Yeoman, and a specially healthy stock of the old variety Arran Victory, have been grown extensively for distribution as seed. Experiments with different varieties of crops and on calf-rearing and pig-feeding have been carried out. The animals from some of these experiments were on view at the Ministry's Educational Exhibit at the Royal Ulster Agricultural Society's Shows.

Organised parties connected with agriculture visit the farm by previous appoint ment with the Ministry.

NORTH-WEST SCHOOL FARM.

The utilisation of this farm and the manner in which it is run have been referred to in previous reports. During the years under review no radical changes were made in regard to the usual practices. Concurrently with the growing of crops, tests to compare different varieties of potatoes, oats, turnips and mangels were carried out, and a section of the tillage area was also utilised for the propagation of a number of new strains and varieties of oats raised at the Ministry's Plant Breeding Division. The testing of indigenous strains of perennial ryegrass against commercial strains as regards the production of both hay and pasture was undertaken and the saving of seed from the indigenous strains was begun on a commercial scale.

In the live stock section of the farm some pig feeding tests were carried out and costings made of the outlay in producing bacon pigs and beef cattle. One pig feeding test comprised a comparison of tapioca root flour and maize meal in a fattening ration and the results indicated that tapioca root flour can replace successfully up to 50 per cent. of the maize meal. Subject, therefore, to its being available at a price which compares favourably with that of maize meal, the inclusion of a proportion of tapioca root flour in rations for pigs is justified, particularly as its use appears not only to increase the efficiency of the ration but also to improve the quality of the carcases.

Another experiment was carried out with the object of comparing maize meal alone and maize meal and cooked maize with barley meal in rations for fattening pigs; also to compare tapioca root flour with barley meal for that purpose. The results showed that the inclusion of barley meal to replace part of the maize meal effected an improvement in the live weight gains ; that there was little advantage in including a proportion of cooked maize, and that, as in the other experiment, tapioca root flour can be used to replace up to 50 per cent. of the maize meal. Apart from the question of economy of gain, the use of barley meal in suitable proportion in pig rations is important as this food has a beneficial effect on the quality of the carcase.

A third pig experiment was arranged to investigate the optimum proportion of cooked potatoes which can be economically used along with a suitable mixture of meals. While a satisfactory thrive was obtained even when four and six parts, respectively, of cooked potatoes to 1 part of meal mixture were fed, it was found that the efficiency of the ration was greatest when one part potatoes to one part meal mixture was used and that the maximum proportion of potatoes to meals would appear to be 2 : 1. It was also found that an excessive proportion of potatoes to meal mixture had a deleterious effect on the quality of the bacon and for that reason alone it is important to exercise discretion in the use of potatoes for feeding bacon pigs.

Poultry and dairying sections are maintained for the purpose of providing teaching facilities and for giving the pupils practical experience in details of management. In the poultry section, representative flocks of White Wyandottes, Rhode Island Reds, White Leghorns, and Light Sussex are kept. A limited number of sittings of hatching eggs and of stock birds were sold each year ; the number of sittings sold annually was about 70.

Experiments with varieties of vegetables and of small fruits were continued in the garden which is maintained primarily to supply fresh vegetables and fruit to the school. In the apple orchard, tests with spraying materials for the control of insect and fungoid pests were carried out. The orchard is a good example of the combination of apple growing and poultry keeping.

During 1934 the area of the farm was increased by the purchase of an adjoining farm containing about 40 acres.

APPENDIX II.

Agricultural Laws

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APPENDIX II.

DISEASES OF ANIMALS ACTS.

NEW ORDERS.

The Transit of Animals (Northern Ireland) (Amendment) Order of 1932, *dated* 1*st April*, 1932.

Having regard to the increase in recent years of the use of motor vehicles for the transit of animals the Ministry, after conferring with the various interests involved, decided to make such vehicles amenable to cleansing and disinfection requirements as in the case of vessels and railway vehicles.

The Order mentioned above has this effect and the road vehicles brought within the scope of the Order are those used for :—

(a) hire for the conveyance of animals ;

(b) the conveyance of animals the property of a dealer or in connection with the business of a dealer ;

(c) the conveyance of animals the property of two or more owners.

Provision is made in the Order whereby Local Authorities can provide facilities for the necessary cleansing and disinfection and make a reasonable charge to cover the cost.

The Order also regulates the construction and equipment of mechanically propelled road vehicles and trailers attached thereto which are used for the carriage of live stock.

During the period under review reports were received in a number of instances from the Ministry's Inspectors and the Police as to the non-compliance of lorry owners with the provisions of this Order. In no case were proceedings instituted, but the owners were warned that non-compliance with the requirements in future would be seriously dealt with.

In connection with the provision whereby Local Authorities can provide cleansing facilities, arrangements were made with the Belfast Corporation for the erection of a cleansing station in the city of Belfast. A charge of 6d. for horse drawn vehicles and 9d. for mechanically propelled vehicles is made. The station commenced operations in December, 1933, and up to the end of the period under review 1,300 vehicles were dealt with.

Bovine Tuberculosis (Northern Ireland) Order, 1926.
Amendment Order 1931 *dated 3rd November*, 1931.

The Bovine Tuberculosis (Northern Ireland) Order, 1926, laid down a minimum compensation payment of £2 : 5 : 0 irrespective of the valuation placed on an animal to be dealt with under the Order. It was thought, however, that this figure was somewhat generous and it was therefore decided that the minimum compensation figure should be reduced to 30/–. The new Order gives effect to this decision and a similar Order has been made by the Ministry of Agriculture and Fisheries as regards Great Britain.

The Bovine Tuberculosis (Northern Ireland) Order of 1926 is administered by the Local Authorities for the purpose of the Diseases of Animals Act, i.e., the County Councils and the County Borough Councils of Belfast and Londonderry. The Order requires that any person having an animal which is affected with or suspected to be suffering from Bovine Tuberculosis must report the matter to the Police, who thereupon advise the Local Authority and the Ministry. During the period under review 3,712 animals were slaughtered under the Order.

The total amount of compensation paid by Local Authorities and the average amount of compensation per animal are shown in the table below, together with details as to the numbers of animals dealt with under the Order during the three years under review :—

Year.	Number of animals affected.	Number died.	Number slaughtered.	Total Compensation paid.	Average Compensation per animal.
				£ s. d.	£ s. d.
1931-32 ..	1,436	95	1,341	7,249 6 3	5 8 1
1932-33 ..	1,365	95	1,270	6,248 15 0	4 18 5
1933-34 ..	1,216	115	1,101	4,664 2 6	4 4 9

Under the provisions of the Administrative Provisions Act (Northern Ireland), 1926, the total amount of money paid by Local Authorities as compensation for the slaughter of animals under the Bovine Tuberculosis Order was refunded by the Ministry, after making a deduction for any monies received by Local Authorities in respect of the sale of carcases.

The Foreign Hay and Straw (Ireland) Order of 1912 *Amendment (Northern Ireland) Order*, 1932, *dated 9th February*, 1932.

The Foreign Animals (Northern Ireland) Order of 1932, *dated 9th February*, 1932.

On account of the very drastic action taken by the Government of the Union of South Africa to prevent the introduction of Foot-and-Mouth disease into the Union from Southern Rhodesia, where this disease had occurred, and in view of the success which attended that action, the British Ministry removed the embargo on hay and straw from that Dominion which had been established in June, 1931. The embargo imposed at the same time on the bringing into a port in Great Britain of ruminating animals and swine from South Africa was also removed and Northern Ireland by the two Orders indicated above took parallel action.

The importation of hay or straw packing materials into Northern Ireland is prohibited, except under licence issued by the Ministry. Considerable quantities of merchandise packed with hay or straw are imported into Northern Ireland and the Ministry issued 220 licences in 1931-32, 307 in 1932–33 and 275 in 1933–34. These licences are issued on the condition that the packing material is destroyed under the supervision of the Police immediately after the goods are unpacked at the importer's premises. This ensures that the straw is not brought into contact with animals. The importation of manufactured straw from abroad is also prohibited except under licence and licences were issued in respect of 46 consignments in 1931–32, 37 in 1932–33 and 45 in 1933–34. These licences were granted on the production of a certificate from the country of origin to the effect that the straw had been effectively disinfected prior to export.

The Sheep Dipping (Northern Ireland) Order of 1932, *dated 8th April*, 1932.

The Sheep Dipping (Northern Ireland) Order of 1932—*Amendment Order No. 2 of* 1932.

The Sheep Dipping (County Fermanagh) Order of 1932, *dated 23rd November*, 1932.

The Sheep Dipping (Special Regulation) Order of 1933, *dated 11th September*, 1933.

The Sheep Dipping (Special Regulation) Order of 1934, *dated 20th June*, 1934.

The Sheep Dipping (Local Regulations) Order of 1934, *dated 22nd June*, 1934.

With a view to securing the more efficient dipping of sheep in Northern Ireland the Ministry made on the 8th April, 1932, the Sheep Dipping (Northern Ireland) Order of 1932, which provided that there should be two summer dippings of sheep instead of one as heretofore, and that there would be no compulsory autumn dippings except in areas where Sheep Scab was prevalent. In such areas the Order provides that a district may be scheduled and all sheep within the district must be thoroughly dipped. The Order also provides for the more efficient supervision of imported sheep with a view to their being properly dipped as soon as possible after their arrival in Northern Ireland. Measures complementary to the Order are the employment of local sheep dipping inspectors all the year round instead of for the dipping period only.

In cases where sheep are brought from any place outside of Northern Ireland for sale at a market or fair in Northern Ireland the person selling the sheep must inform the purchaser that the sheep were brought from outside Northern Ireland, and if such sheep are sold at an auction or sale the auctioneer must, at the time of sale, inform the purchaser that they were brought from outside Northern Ireland. This requirement is embodied in the Sheep Dipping (Northern Ireland) Order of 1932—Amendment O 'der No. 2 of 1932 made on the 10th June, 1932, to secure that such sheep are properly dipped.

In the autumn of 1932 the prevalence of Sheep Scab in certain parts of County Fermanagh caused the Ministry grave concern. In a mountainous area round Belcoo the disease was detected in a large number of cases. Fences are so rare in this district that sheep can wander at will over extensive areas and the collection of the sheep for the prescribed summer dippings was not attended with satisfactory results. The disease was, therefore, difficult to eradicate and to secure that all sheep in the district would be thoroughly dipped the clause of the 1932 Order was brought into operation which provided for the scheduling of an area where disease was prevalent. Accordingly, on 23rd November, 1932, the Sheep Dipping (Co. Fermanagh) Order, 1932, was made, requiring the double dipping of all sheep in a district of about 65 square miles around Belcoo. As a result a satisfactory state of affairs with regard to Sheep Scab in County Fermanagh was brought about and the Order was revoked on the 14th January, 1933.

During the year 1933 the question of Sheep Scab in Northern Ireland gave the Ministry further cause for concern. It was felt that a closer co-operation between the Ministry's veterinary staff and the officers of the Local Authorities was desirable and during the summer dipping period the Ministry's Veterinary Inspectors supervised the dippings of sheep where practicable and discussed with the officers of the Local Authorities means to secure the more efficient dipping of sheep in Northern Ireland. Arrangements were made for the examination of all public sheep dipping baths and reports were furnished as to the condition of the baths. It was found that a large number of the baths used were not in a satisfactory state of repair and arrangements were made to have them put in order. In addition inspections were made with a view to securing suitable sites for dipping baths in areas which were not provided with such facilities and arrangements were made in a large number of instances for the erection of new baths.

In the autumn of 1933, it was felt that a double dipping of sheep should be made compulsory in addition to the usual summer double dipping, and an Order was made entitled the Sheep Dipping (Special Regulation) Order of 1933 requiring that within the period 15th October to 15th November all sheep should be double dipped, with an interval of not less than seven or more than fourteen days between each dipping.

In 1934 further inspections were made by the Ministry's veterinary staff of the equipment and accommodation of the public dipping baths and repairs where necessary were carried out. A number of new baths were also erected during the year and the summer dippings were supervised.

Regulations were made by two Local Authorities during the period under review requiring that in the case of flocks of sheep of 20 or under such flocks must be dipped at the public dipping stations and under the supervision of the local sheep dipping inspectors. These Regulations were made under the provisions of the Sheep Dipping (Local Regulations) (Ireland) Order, 1916. In order to bring into stricter conformity with the requirements of this Order the practice of Local Authorities in giving notice of Regulations made by them, the Ministry made the Sheep Dipping (Local Regulations) Order of 1934, which laid down the procedure to be followed when such regulations were made and the method of notifying sheep owners.

In the autumn of 1934, it was again decided to require the double dipping of sheep and an Order similar to the Order made in 1933 was made and put into operation. As a result of these efforts it is hoped that a considerable improvement in the Sheep Scab position in Northern Ireland will take place.

Parasitic Mange (Northern Ireland) Order, 1932, dated 17th May, 1932.

Until April, 1932, Northern Ireland had fortunately been virtually free from Parasitic Mange in cattle. About that time, however, some cases came to notice in

an area in Co. Tyrone and the Ministry thought it necessary to make this disease in cattle notifiable under the Diseases of Animals Acts. The total number of outbreaks of Parasitic Mange confirmed during the three years under review were 1 in 1931–32, 6 in 1932–33 and 4 in 1933–34.

The Anthrax (Northern Ireland) Order of 1932, *dated* 16*th June*, 1932.

The British and Irish Free State Ministries of Agriculture revised their Orders in 1932 for dealing with outbreaks of Anthrax and Northern Ireland brought its Regulations into line. The principal new features of the revised Order, which in general tightens up the procedure for dealing with outbreaks or suspicious cases of Anthrax, are that the existence or the suspicion of Anthrax in a carcase as well as in a live animal brings the Ministry's Order into operation. During the three years covered by this Report 8 outbreaks of the disease were confirmed, 2 in 1931–32, 2 in 1932–33, and 4 in 1933–34.

The Foreign Animals (Northern Ireland) Order, 1932, *dated* 17th *May*, 1932.
The Foreign Animals (Northern Ireland) Order of 1932, *No.* 2, *dated* 11*th June*, 1932.

At the beginning of May, 1932, an outbreak of Foot-and-Mouth disease was confirmed in California and consequently the Ministry by the first-named Order put an embargo on the bringing into a port in Northern Ireland of ruminating animals and swine as ship's stores from the whole of the United States of America. It was found, however, that as a result of the action taken by the United States Authorities the outbreak had successfully been confined to the State of California, and it was considered desirable to make a second Order removing the embargo, except on animals from that State. On the 24th October, 1932, the embargo was removed in its entirety when it was found that the outbreak in California had been completely stamped out.

The Importation of Wrapping Materials (Northern Ireland) Order 1932, *dated* 20*th June*, 1932.

It was found that meat from places abroad was being imported in packing materials which were afterwards used for packing commodities which would normally be brought into contact with animals susceptible to Foot-and-Mouth disease. To combat this the Ministry now requires by the above-mentioned Order that the meat shall be imported in either paper or stockinette, or if other cloths are used that they shall be of a distinctive pattern which will make them easily recognisable.

The Ministry prohibited the use of the distinctive cloth in the packing of feeding stuffs, bedding, fertilisers, horticultural produce and other commodities which, it was reasonable to expect, might be brought into contact with ruminating animals and swine.

The Transit of Animals (Northern Ireland) (Amendment) Order No. 2 *of* 1932, *dated* 1*st November*, 1932.

The main provisions of this Order render it necessary for any vessel in which it is proposed to carry animals from a port in Northern Ireland to be efficiently cleansed and disinfected beforehand to the satisfaction of the Ministry, if the vessel has during the previous 28 days been engaged in trade of any description with countries other than Great Britain, the Irish Free State, the Channel Islands, or the Isle of Man. The Order also continues a previously existing requirement that where a vessel is used for carrying cargo other than animals the vessel shall be effectively cleansed before any animals are again taken on board.

The Portal Inspection (Northern Ireland) Order, 1933, *dated* 27*th February*, 1933.

Owing to the railway strike which occurred in February of 1933, the stock-yards at Belfast (Maysfields), owned by the Great Northern Railway, were closed down with the result that accommodation had to be procured elsewhere for the detention of live stock prior to shipment. Arrangements were accordingly made whereby all animals to be exported which would usually have been presented at Maysfields were detained at the sale-yards of the three principal live stock auctioneers in Belfast, and the above-mentioned Order was accordingly made which provided for this accommodation. At the termination of the railway strike the Order was revoked by the Portal Inspection (No. 2) Order of 1933, which was made on the 19th April, 1933.

Portal Inspection (Northern Ireland) No. 3 *Order of* 1933 *made on* 1*st May*, 1933.

Live stock shipments from the port of Newry were terminated as from the 1st January, 1931, as the Canal which leads from Newry to the sea became unnavigable.

In April, 1933, intimation was received from the Dundalk and Newry Steam Packet Company, Limited, to the effect that the Canal was again navigable and that regular sailings of live stock would take place as from the 6th May, 1933. Accordingly the Ministry arranged for the attendance of a Veterinary Inspector at the port of Newry for the purpose of examining all consignments presented for shipment and the above-mentioned Order was made, adding the port of Newry to the list of ports scheduled for the inspection of animals for exportation under the Exportation of Animals (Northern Ireland) Order of 1923. Since that date regular sailings have taken place from the port of Newry.

Destructive Imported Animals Act (Northern Ireland), 1933.

The above-mentioned Act empowers the Ministry to prohibit by Order the importation into, and the keeping within Northern Ireland, of any muskrat. On the 19th April, 1933, the Ministry made the Muskrats (Northern Ireland) Order of 1933, which provided that the importation into, and the keeping within Northern Ireland, of any animal commonly known as the muskrat or musquash was prohibited.

In this connection Northern Ireland is at present believed to be free from the muskrat, but as its presence has been confirmed in both Great Britain and the Irish Free State, it was considered necessary to take the precautions mentioned above.

OUTBREAKS OF DISEASE.

The following table indicates for the three years covered by this Report the number of outbreaks of disease reported to the Ministry.

Year.	Bovine Tuberculosis		Anthrax	Parasitic Mange	Sheep Scab	Swine Fever	Foot and Mouth Disease	
	No. of Outbreaks	No. of Animals Declared Affected	Outbreaks Confirmed	Outbreaks Confirmed	Outbreaks Confirmed	Outbreaks Confirmed	Outbreaks Confirmed	No. of Animals Affected
1931-32	1,409	1,436	2	1	115	9	—	—
1932-33	1,337	1,365	2	6	290	4	—	—
1933-34	1,195	1,216	4	4	213	4	—	—

IMPORTATION OF BREEDING ANIMALS.

The following breeding animals were imported into Northern Ireland from approved premises in Great Britain to approved isolation premises in Northern Ireland under permit issued by the Ministry. The usual enquiries are made and precautions taken in each instance before a permit is issued by the Ministry.

1. *SCOTLAND (FARM TO FARM).*

	1931-32.	1932-33.	1933-34.
(*a*) *Cattle.*			
Ayrshire	32	77	109
Galloway	2	17	14
Shorthorn	3	8	2
Aberdeen Angus	3	4	4
Jersey	–	2	–
Friesian	–	–	4
West Highland	–	–	2
	40	108	135

	1931-32.	1932-33.	1933-34.
(*b*) *Sheep.*			
Border Leicester	18	17	13
Blackface	2	1,015	174
Cheviot	30	80	–
Suffolk	–	10	3
Other breeds	2	2	–
	52	1,124	190

(*c*) *Goats.*

One British Toggenberg goat was imported under permit from the owner's farm in Scotland to the importer's farm in Northern Ireland.

(*d*) *Pigs.*

10 sows and 5 boars of the Large White York type were imported during 1934, and 18 sows and 7 boars during 1933.

2. *SCOTLAND (SALES).*

	1931-32.	1932-33.	1933-34.
(*a*) *Cattle.*			
Galloway	8	15	9
Shorthorn	19	7	12
Aberdeen Angus	34	7	23
Ayrshire	–	1	–
	61	30	44
(*b*) *Sheep.*			
Blackface	43	3,515	4,450
Border Leicester	8	27	86
Suffolk	–	5	–
Cheviot	–	–	215
	51	3,547	4,751

3. *ENGLAND AND WALES (QUARANTINE STATION).*

	1931-32.	1932-33.	1933-34.
(*a*) *Cattle.*			
Shorthorn	7	–	–
Jersey	3	5	–
Red Poll	1	–	–
Hereford	–	1	–
(*b*) *Pigs.*			
Large White York	5	1	39
Large Black	–	–	1
Lop-eared	–	–	2
(*c*) *Goats.*	6	–	–

4. *ENGLAND AND WALES (FARM TO FARM).*

Owing to the freedom of England and Wales from Foot-and-Mouth disease importations of live stock were permitted during a short period in 1932. These importations were allowed on farm to farm conditions for the first time for a considerable number of years, and the following animals were imported :—

(*a*) *Cattle:*

Red Poll	6
Jersey	6
West Highland	6

(*b*) *Sheep:*

Suffolk Ram	1

(*c*) *Pigs:*

Large White York ..	17
Essex	2

(*d*) *Goats:* 2

FOREIGN ANIMALS.

No animals were imported from foreign countries for agricultural purposes during the period covered by this report. Licences were issued in several instances permitting the importation of a number of animals from foreign countries for the Zoological Gardens, Bellevue, Belfast.

EXPORT OF HORSES.

During the period under review certificates were issued by the Ministry to cover the importation into the United States of America of the following horses. The animals in all cases were hunters :—

1931–32	1932–33	1933–34
9	14	13

EXPORT OF WOOL.

Certificates were issued by the Ministry during the three years covering this report of 370 bales of wool in 1931–32, 1,227 bales in 1932–33, and 616 bales in 1933–34. These consignments were sent to the United States of America, Italy and Bulgaria.

APPROVED SHEEP DIPS.

125 sheep dips and 4 disinfectants were approved for sale and use in Northern Ireland to comply with the relevant provisions of the Ministry's Orders.

CARCASES WASHED ASHORE.

Reports were received in the Ministry to the effect that 193 carcases of animals were found washed ashore. Post-mortem examinations were carried out on many of these carcases, but in no case was there any evidence of contagious animal disease found and arrangements were made for the burial of the carcases.

POULTRY DISEASES ACT (NORTHERN IRELAND), 1932.

To safeguard the rapidly developing poultry industry in Northern Ireland, the above Act was passed on the 7th June. 1932, with the object of bringing poultry within the scope of the Diseases of Animals Acts,as it was found that several outbreaks of Bacillary White Diarrhoea had been caused by the importation of diseased chicks and eggs.

The Ministry made an Order under the above-named Act prohibiting the landing in Northern Ireland of poultry, or eggs for hatching, unless accompanied by a permit from the Ministry. This Order was named the Poultry Diseases Order (Northern Ireland) 1933. Permits in respect of adult poultry are issued only after the producer of the birds sends a certificate from the appropriate agricultural authority which in Great Britain is either the Ministry of Agriculture and Fisheries or the Department of Agriculture for Scotland, to the effect that the flocks from which the birds to be sent were produced have been tested and found free from Bacillary White Diarrhoea. If this certificate cannot be procured, the producer may sign a declaration that his flocks are free from poultry disease and the birds must, when the permit is issued be sent via Belfast Port, where they are detained and tested for Bacillary White Diarrhoea before being released to the consignee. If any birds fail in this Test, the consignment is returned. A small charge is made for expenses incurred by the

detention of the birds. When day-old chicks or eggs for hatching are to be sent, the consignor must furnish a certificate from an official source approved by the Ministry for this purpose to the effect that the flocks have been tested and found free from Bacillary White Diarrhoea.

Breeders in England and Wales may send a certificate to this effect from their local agricultural committee in place of the one from the Ministry of Agriculture and Fisheries. In all cases, a declaration from the consignor as to the freedom from disease of the flocks from which the chicks or eggs to be sent are produced must be submitted. No restrictions are placed on chicks or eggs for hatching, once they have been permitted to land in Northern Ireland.

Under the Order, the landing in Northern Ireland of 997 adult birds (21 of which were turkeys) 23,228 chicks and 11,451 eggs for hatching was dealt with from the 9th October, 1933, until the 30th September, 1934. 60 birds were returned to the consignors ; 36 of the birds had failed to pass the necessary test for Bacillary White Diarrhoea. Permission is granted for the return to Northern Ireland of any birds which are being sent for exhibition in Great Britain. The Ministry does not require that these birds should be tested on arrival in Northern Ireland. Special permission was also granted for the landing in Northern Ireland of poultry from Great Britain for exhibition at several shows. These birds were not tested on arrival, and were all returned to the exhibitors. None of them was sold during the period of exhibition.

The Order does not interfere with the sending of birds by breeders in Northern Ireland to laying tests in Great Britain.

CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACT, 1934.

The Imperial Government has for some years been giving special consideration to the situation of the livestock industry and more particularly to that branch concerned with beef production. Measures which were taken to regulate beef supplies had not produced satisfactory results. Prices of cattle continued to deteriorate and consequently it was decided to afford temporary relief by subsidising home producers pending the formulation of a long-term policy.

This relief is provided for in the Cattle Industry (Emergency Provisions) Act, 1934 (popularly known as the Beef Subsidy Scheme), which came into operation on the 1st September, 1934.

Under the Act subsidies are payable at the rate of 5/– per cwt (live weight basis) in respect of the following classes of cattle :

(a) Bullocks ;
(b) Heifers, and
(c) Cow Heifers. (A cow heifer is defined as any female bovine animal which has calved but which has not grown more than six permanent incisor teeth).

A special committee, known as the Cattle Committee, has been charged with the administration of the Act and the Ministry is acting on behalf of this Committee in Northern Ireland. Members of the Ministry's Veterinary Staff act as Certifying Officers. The Cattle Committe laid down the following conditions governing subsidy payments :—

(1) The animal must be presented for examination, marking, weighing and certification at an approved centre.
(2) The animal must conform with the prescribed standard, namely, a killing out percentage of not less than 52 per cent. (The percentage has since been altered to 54 per cent.)
(3) The animal must not weigh less than 5½ cwt.
(4) The animal must have been in the United Kingdom for a continuous period of at least three months.
(5) No person is eligible to receive payment unless he is a producer of cattle, a producer being defined in the Act as a person whose business it is to keep cattle in the United Kingdom for the purpose of selling them in an improved condition.
(6) A producer claiming payment must have sold the animal.
(7) No payment can be made in respect of an animal which remains unsold by the producer at the end of the period of one month after it has been certified.

Ordinarily the Certifying Officer is in a position to state in the certificate which he forwards to the Cattle Committee that the sale has taken place, and in this normal type of case the producer is relieved from all trouble other than that involved in the

presentation of the animal at an approved centre. Exceptionally the necessary sale (see Condition No. 6) may not take place until a date subsequent to that of certification, and in this case the producer must complete and forward to the Cattle Committee a form of declaration of sale.

The Belfast Auction Marts, the weekly markets at Ballymena and Londonderry, and sixty-eight other markets and fairs in Northern Ireland were approved by the Cattle Committee as certifying centres.

The total number of cattle certified in Northern Ireland under the Act during the month of September, 1934, was 6,823, and the average amount of the subsidy payment made in respect of each animal was £2 3s. It will thus be seen that a substantial measure of financial relief is being afforded to the Northern Ireland cattle-producing industry by the Act.

LIVE STOCK BREEDING ACT (NORTHERN IRELAND), 1922.

1. *LICENSING OF BULLS.*

During the three-year period under review the operations under this Act were conducted on the usual lines, and it is satisfactory to report that there has been a steady improvement in the quality of the cattle of the Province which can be attributed in great measure to the elimination of inferior bulls under the Act.

The results of the inspections which were carried out at local centres and at the annual Spring Sales held at Balmoral and Londonderry and also a few representative local sales are summarised in the following tables :—

Inspections of Bulls, Year 1932.

County.	Applications.	Licensed.	Rejected.	Withdrawn for various reasons, e.g., under age.
Antrim	1,284	1,035	222	27
Armagh	530	366	148	16
Down	710	587	88	35
Fermanagh ..	448	329	104	15
Londonderry ..	603	469	111	23
Tyrone	979	745	184	50
TOTALS ..	4,554	3,531*	857	166†

* Includes 12 licensed on appeal.
† Of the 166 cases withdrawn, 77 were under age, 30 were slaughtered, 42 were castrated, 1 was exported and 16 were duplicate applications.

Inspections of Bulls, Year 1933.

County.	Applications.	Licensed.	Rejected.	Withdrawn for various reasons, e.g., under age.
Antrim	1,287	1,018	238	31
Armagh	483	325	137	21
Down	792	614	141	37
Fermanagh ..	412	289	108	15
Londonderry ..	619	468	132	19
Tyrone	979	694	244	41
TOTALS ..	4,572	3,408*	1,000	164†

* Includes 7 licensed on appeal.
† Of the 164 cases withdrawn, 85 were under age, 28 were slaughtered, 39 were castrated, 2 were exported and 10 were duplicate applications.

Inspections of Bulls, Year, 1934.

County.	Applications.	Licensed.	Rejected.	Withdrawn for various reasons, e.g., under age.
Antrim	1,423	1,034	353	36
Armagh	504	345	121	38
Down	633	511	95	27
Fermanagh ..	497	337	145	15
Londonderry ..	583	432	131	20
Tyrone	999	687	256	56
TOTALS ..	4,639	3,346*	1,101	192†

* Includes 7 licensed on appeal.

† Of the 192 cases withdrawn, 73 were under age, 53 were slaughtered, 49 were castrated, 9 were exported and 8 were duplicate applications.

In 60 cases appeals were lodged against the Ministry's decision to refuse to grant licences. Twenty-six of these were successful and licences were issued to the owners of the bulls concerned. In the remaining 34 cases licences were finally refused.

The Ministry felt obliged to institute legal proceedings in 74 instances against persons who failed to comply with the provisions of the Act. Convictions were secured in every instance except three.

Five hundred permits were granted to enable owners of unlicensed bulls to retain their animals until they could be fattened off for slaughter.

2. *LICENSING OF BOARS.*

In the year 1933 it was considered that with a view to accelerating improvement in the breeding of pigs the time was opportune to extend the provisions of the Act to boars. This view was endorsed by the Advisory Committee in connection with the breeding of pigs and by the Consultative Committee. Accordingly in 1933 an order, as authorised by Section 13 of the Act, was made by the Ministry in which the Act was made applicable to boars as from the 31st January, 1934. The necessary Statutory Rules were also made on the same date. Briefly, it was provided that, as in the case of bulls, all boars of the prescribed age must be licensed except in special circumstances where permits might be granted to enable owners of older boars which were unsuitable for licensing to fatten off the animals for slaughter.

The following are particulars of the dates by which boars reach the prescribed age:

Boars farrowed in the months of:	Prescribed dates by which the boars must be licensed.
July, August and September	31st January of following year.
October, November and December	30th April of following year.
January, February and March	31st July of that year.
April, May and June	31st October of that year.

The requirements of the Order were brought to the notice of all concerned by means of leaflets issued to breeders, Farmers' Unions, Co-operative Societies, Milk Recording Associations and Agricultural Instructors. Advertisements were also inserted in the press, including agricultural publications.

The following summary shows the number of applications for licences received in each of the Six Counties and the result of the inspections up to 30th September, 1934.

County.	No. of Applications.	No. of Boars Licensed.	No. of Boars Rejected.	No. of Applications withdrawn.
Antrim ..	331	316	8	7
Armagh ..	117	113	3	1
Down ..	458	398	31	29
Fermanagh	89	82	5	2
Londonderry	376	313	23	40
Tyrone ..	260	236	15	9
TOTALS	1,631	1,458	85	88

Of the 88 applications withdrawn before inspection, in 40 cases the animals were castrated, in 19 they were slaughtered, in 14 cases they were sold, the purchasers being unknown, and there were 15 duplicate applications.

HORSE BREEDING ACT (NORTHERN IRELAND), 1926.

The numbers of stallions which were licensed in the three years 1932, 1933 and 1934 were, respectively, 177, 181 and 186. In the past ten years the number of such animals has increased by over 50 per cent. In 1925, there were only 122 licensed stallions in Northern Ireland. The number of Clydesdale stallions licensed in 1925, viz., 44, was doubled, while the number of Thoroughbreds licensed in 1925, viz., 23, was increased by 12 and of Half-breds and others by 8.

During the three-year period under review 35 stallions were rejected for faulty conformation, 11 for unsoundness and 1 because of both unsoundness and faulty conformation. 36 of these stallions were castrated, 5 were exported, and 1 was destroyed, while in four instances permits were granted for draught purposes, and in the remaining case a special licence was given to enable the owner to use the stallion for the service of his own mares only.

Eight appeals were lodged against the Ministry's refusal to grant licences and in two cases the appeals were upheld and licences granted. In the remaining six cases the Ministry's original decision to refuse to grant licences was confirmed. Twenty-eight permits were granted to enable owners to use their unlicensed stallions for draught or harness purposes.

In three instances the Ministry was obliged to institute legal proceedings against owners of unlicensed stallions who failed to comply with the law in respect of their animals. Convictions were secured in each instance.

Table showing the results of the inspections of Stallions for licences in the years 1932, 1933 and 1934.

County.	No. of applications for licences.			No. of licences granted.			No. of licences refused.		
	1932	1933	1934	1932	1933	1934	1932	1933	1934
Antrim	40	45	46	40	43	41	—	2	5
Armagh	24	20	18	22	18	16	2	2	2
Down	43	46	47	41	44	44	2	2	3
Fermanagh ..	20	16	21	18	16	18	2	–	3
Londonderry ..	38	42	46	33	38	41	5	4	5
Tyrone	28	25	26	23	22	26	5	3	–
Totals	193	194	204	177	181	186	16	13	18

Table showing the number of Stallions of each breed licensed in each county for the years 1932, 1933 and 1934.

County.	1932.					1933.					1934.				
	Thoroughbred.	Clydesdale.	Half-bred.	Others.	Total.	Thoroughbred.	Clydesdale.	Half-bred.	Others.	Total.	Thoroughbred.	Clydesdale.	Half-bred.	Others.	Total.
Antrim	5	15	12	8	40	5	15	12	11	43	5	14	13	9	41
Armagh	1	9	9	3	22	1	7	8	2	18	1	7	7	1	16
Down	22	10	9	—	41	25	12	6	1	44	22	15	6	1	44
Fermanagh	1	5	6	6	18	2	4	5	5	16	2	5	5	6	18
Londonderry ..	2	25	5	1	33	2	28	7	1	38	2	33	4	2	41
Tyrone	2	14	4	3	23	3	12	3	4	22	3	14	5	4	26
Totals	33	78	45	21	177	38	78	41	24	181	35	88	40	23	186

Table showing the number of licensed Stallions by counties each year from 1925-1934 inclusive.

County	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Antrim	29	35	37	37	38	46	40	40	43	41
Armagh	7	10	11	15	15	18	19	22	18	16
Down	35	35	34	41	42	44	41	41	44	44
Fermanagh	9	11	13	14	15	18	18	18	16	18
Londonderry	27	28	24	26	29	30	33	33	38	41
Tyrone	15	13	13	13	16	21	16	23	22	26
Totals	122	132	132	146	155	177	167	177	181	186

DESTRUCTIVE INSECTS AND PESTS ACTS (NORTHERN IRELAND), 1877 to 1934.

With a view to making adequate provision for dealing with the pest known as the Colorado Beetle, should it appear in Northern Ireland, the Destructive Insects and Pests Acts, 1877 and 1907, were amended by the Destructive Insects and Pests Act, 1934. The Ministry felt that while the powers possessed under the Act of 1877 were adequate so far as taking steps to prevent the introduction of this pest to this country, it was necessary in view of the spread of this pest on the Continent to provide definitely for circumstances which might arise if the pest were discovered in Northern Ireland. The Act of 1877 provided that in the event of the Colorado Beetle appearing in Ireland, any compensation which might arise through the necessity for destruction of a potato crop, would be met by the Local Authority out of rates. The Act of 1934 provides for payment of compensation by the Ministry in respect of any crop removed or destroyed on the Ministry's authorisation.

(*a*) *The Importation of Plants* (*Northern Ireland*) *Order of* 1933.

Orders dealing with plant importation had become so numerous that it was deemed advisable to bring the various regulations together in the above Consolidation Order made after consultation with the Ministry of Agriculture and Fisheries.

The Orders revoked and replaced by the new Order are enumerated below :—

The Destructive Insects and Pests (Northern Ireland) Order of 1922, Amendment Order of 1927.

The Colorado Beetle (Northern Ireland) Order of 1924.

The Colorado Beetle (Northern Ireland) Order of 1925.

The Colorado Beetle (Northern Ireland) (No. 2) Order of 1931.
The Importation of Potatoes (Malta and Canary Islands) (Northern Ireland) Order of 1927.
The Importation of Raw Apples (Northern Ireland) Order of 1930.

In the administration of the Importation of Plants Order (Northern Ireland), 1933, the Ministry is assisted by the Customs authorities, who notify the arrival of any consignments of plants which are unaccompanied by the necessary health certificates as required by the Order. During the period under review 941 consignments, mainly consisting of Hyacinth, Gladioli, Tulip and Narcissus Bulbs were imported into Northern Ireland, the chief exporting country being Holland.

During the year 1934 the Ministry, in order to conform with the Regulations of the Ministry of Agriculture and Fisheries made an Order entitled the Importation of Plants (Northern Ireland) (Amendment) Order, 1934, modifying the Order of 1933. This Order extended by three weeks the period during which the landing in Northern Ireland of any raw vegetables or cider apples grown in European France is prohibited unless each consignment is accompanied by a certificate issued by the French Services d'Inspection Phytopathologique.

(*b*) *The Importation of Elm Trees and Conifers* (*Prohibition*) (*Northern Ireland*) *Order of* 1933.

With the object of preventing the introduction of diseases and pests injurious to elm trees and forest trees, the Order mentioned above was made on the 14th November, 1933, and came into operation on the 1st day of December in that year. Briefly, the Order prohibits (1) the importation into Northern Ireland from any country outside Ireland of all species of the genus Ulmus, and (b) the importation into Northern Ireland of any living plant of the following genera of the Order Pinaceae ; viz., Abies, Larix, Picea, Pinus, Pseudotsuga, Sequoia, Thuja and Tsuga, from any country other than Great Britain, the Irish Free State, the Channel Islands or the Isle of Man. The Order also prescribes that the certificate required on the importation of plants shall include a statement to the effect that the consignment does not include any plant of the genera mentioned above. The procedure to be followed in cases where plants are landed in contravention of the Order is also laid down therein.

(*c*) *Sale of Diseased Plants* (*Northern Ireland*) *Order*, 1927.

The usual inspections of nursery stock exposed for sale in Belfast were carried out by the Ministry's Inspectors. In addition, the county instructors in horticulture during the period under review visited 49 sales of nursery stock either at auctions or in public markets and in 2 cases disease was found which resulted in the voluntary destruction of 25 gooseberry bushes and 200 blackcurrant bushes. Periodical inspections of nurseries in Northern Ireland were also made and where outbreaks of disease were discovered, measures were taken with a view to securing its eradication.

(*d*) *American Gooseberry Mildew and Black Currant Mite* (*Ireland*) *Order*, 1912.

During the period under review 25 licences were issued permitting the importation of 4,400 gooseberry bushes and 2,900 black currant bushes.

In the course of their usual inspections upwards of 200 visits were paid to private gardens by the county instructors in horticulture, and in cases where American gooseberry mildew was found treatment by spraying was generally advised. In some instances, however, where the disease had gone too far to be checked, the bushes were voluntarily destroyed. In a number of cases black currant bushes were also voluntarily destroyed in consequence of their being seriously infected by black currant mite.

(*e*) *Regulations Affecting the Export of Plants.*

During the period under review the Ministry's Inspectors examined and issued certificates in respect of 909 consignments of plants, chiefly composed of rose trees, for export. The consignments were mainly sent to Canada, United States, India and Australia.

Black Scab in Potatoes Orders.

During the period under review the Ministry made the under-mentioned Orders with a view to preventing the spread of Black Scab disease :

(a) Eleven outbreaks of Black Scab were found on holdings in townlands near Bellaghy in the year 1931, and an Order entitled " Black Scab in Potatoes (Northern Ireland) Order, 1932," was made constituting these townlands a Scheduled Area.

(b) During the latter portion of 1932 thirteen outbreaks of Black Scab were reported in part of South Armagh and districts near Portglenone and Ballycastle, and in consequence it was found necessary to make an Order entitled "Black Scab in Potatoes (Northern Ireland) Order (No. 2) of 1932" scheduling the districts concerned.

(c) Owing to the danger of spreading disease incurred in the movement of cabbage plants from townlands in which Black Scab had been found, an Order entitled "Black Scab in Potatoes (Northern Ireland) Order of 1933" was made in June of that year. By fully scheduling a number of townlands in the Bellaghy area (which had formerly constituted a safety zone) this Order aimed principally at controlling the movement of cabbage plants from this area to the clean areas in which the growers normally found their market. Opportunity was also taken in this Order to prevent the unauthorised movement of potatoes by water craft from safety zones. This Order revoked the Black Scab in Potatoes (Northern Ireland) Order, 1932, mentioned at (a) above.

(d) It was also found necessary to make a further Order in 1933, entitled "The Black Scab in Potatoes (Northern Ireland) Order (No. 2) of 1933," which fully scheduled eighteen townlands around Glenariff.

During the period under review legal proceedings were taken in 25 cases on account of breaches of the Orders and in each case a conviction was obtained. In 5 cases the irregularity was due to the movement of cabbage plants for which no movement licence had been granted; five cases arose from the growing of potatoes of a non-approved variety in a scheduled area, while in the remaining 15 cases proceedings were taken on account of the unlicensed movement of potatoes from scheduled areas.

Potatoes Importation (Ireland) Order, 1920.

The following table shows the number of licences issued and the quantity of potatoes covered by licences during the period under review:

Year.	Licences Issued.	Quantity of Potatoes.
		tons.
1931/32	86	39
1932/33	80	46
1933/34	89	79

FERTILISERS AND FEEDING STUFFS ACT, 1926.

During the period under review 26 samples of fertilisers and 86 samples of feeding stuffs were drawn either by the itinerant instructors in agriculture or by an inspector of the Ministry. A number of samples proved, on analysis, to be unsatisfactory in that the guarantee given varied too greatly from the actual composition of the article. Several cases also came to light in which vendors were not giving statutory statements as required by the Act. In all cases the vendors were informed fully as to their obligations and were warned to avoid cause for more severe action in the future.

Intensive inspection of retailers' premises in Northern Ireland was commenced in 1932 with a view to reminding merchants of their obligations under the Act, particularly as regards the giving of statutory statements in respect of each sale of a fertiliser or feeding stuff. Also in order to facilitate retailers in complying with this requirement, wholesale merchants were asked in July, 1933, if they would supply fertilisers and feeding stuffs only in bags on which the actual analysis figures, etc., were branded, or to which was attached a label bearing such particulars. As a result of these persistent efforts to produce a more general and more exact compliance with the provisions of the Act, a very definite improvement in this regard has been observed.

BEE PEST PREVENTION (IRELAND) ACT, 1908.

The County Instructors in bee-keeping visited 2,009 apiaries during the period under review. Over 6,500 stocks of bees were examined and 280 cases of Acarine Disease, 52 cases of American Foul Brood and 1 case of English Foul Brood were discovered. Frow's treatment was advised where possible as a remedy for Acarine disease and American Foul Brood, with Formalin treatment as an alternative remedy for the latter. In some cases, however, where the possibility of recovery was slight the stocks concerned were destroyed.

WEEDS AND AGRICULTURAL SEEDS ACTS (NORTHERN IRELAND), 1909 and 1929.

NOXIOUS WEEDS.

During the three summers included in the period under review inspections were carred out by the Royal Ulster Constabulary with a view to securing the destruction of noxious weeds throughout Northern Ireland. The weeds scheduled under the Act are ragwort, thistle, dock and ox-eye daisy. Recourse to legal proceedings was found necessary in a number of cases as follows :—

1931/32	.. .. ..	8 cases.
1932/33	.. .. ..	31 ,,
1933/34	.. .. ..	19 ,,

AGRICULTURAL SEEDS.

As mentioned in the last report 33 samples of agricultural seeds, drawn by the county instructors in agriculture and the Ministry's inspectors in 1931, were found unsatisfactory on analysis. Four samples were of such poor quality as to justify the publication of the particulars regarding the source of supply. In subsequent seasons the results of each sampling campaign may be shown as follows :—

Year.	No. of samples drawn.	No. of samples found unsatisfactory.	No. of unsatisfactory samples particulars of which were published.
1931/32	264	47	7
1932/33	274	35	2
1933/34	368	54	12

In cases where particulars of unsatisfactory samples were not published the vendors were warned against selling inferior seeds.

In the earlier part of the period under review the Ministry noted that in connection with the analyses of officially drawn samples of packeted vegetable seeds the results in a considerable number of cases were not satisfactory, the germination being frequently so low as to suggest that the seed was old seed. A letter was, in consequence, addressed to wholesalers who packeted seeds with the result that each wholesaler promised to mark packets of seeds with :

(a) the year of packeting ;
(b) a mark which would identify the firm which packeted the seed.

Results have since shown that the action taken has helped in some measure to remedy the unsatisfactory features mentioned in connection with packeted seeds.

SALE OF FOOD AND DRUGS ACTS 1875-1907.

The extent of the activities during the three years ended 30th June, 1932, 1933 and 1934 of the inspectors employed under these Acts by the local authorities in

Northern Ireland in regard to samples of milk, buttermilk, butter, margarine and cheese is set out in the following table :—

Nature of Sample.	No. of samples taken.			No. of prosecutions.			No. of Convictions.		
	1932.	1933.	1934.	1932.	1933.	1934.	1932.	1933.	1934.
Milk	3,084	3,232	3,330	89	66	84	45	42	50
Buttermilk ..	571	502	486	34	22	34	33	20	29
Butter	865	900	905	26	20	29	24	19	29
Margarine ..	297	303	320	—	2	—	—	2	—
Cheese	199	208	200	—	—	—	—	—	—
Totals ..	5,016	5,145	5,241	149	110	147	102	83	108

At the date of the preparation of this report there are 157 premises in Northern Ireland registered under Section 9 of the Margarine Act, 1887, and Section 7 (4) of the Sale of Food and Drugs Act, 1899, for wholesale dealings in margarine. These are distributed as follows :—

County Borough of Belfast	115
County Borough of Londonderry ..	10
County Antrim	13
County Armagh	7
County Down	6
County Fermanagh	1
County Londonderry	2
County Tyrone	3
Total	157

The following table shows the numbers of applicatons received under Section 8 of the Butter and Margarine Act, 1907, for the use of fancy or descriptive names in connection with margarine and the result of the applications :—

Year Ended	Applications Received.	Applications Approved.	Applications Refused.
30/6/32	48	43	5
30/6/33	42	32	10
30/6/34	18	9	9

MARKETING OF EGGS ACTS (NORTHERN IRELAND), 1924-31.

Reference was made in the Ministry's Tenth Annual Report to the passing of the Marketing of Eggs Act (Northern Ireland), 1931, which came into operation immediately prior to the period covered by this Report. The main purpose of that Act was to provide for systematic education amongst poultry-keepers.

For this purpose the Ministry appointed four officers on a full time basis and a number of officers on a temporary basis covering the period of maximum production. During the winter months the full-time officers divide their attention between instruction on the farms and instruction of Class "B" licence-holders in the proper identification of supplies of eggs received from producers and generally in the conduct of their business.

As regards instruction of producers the work was at the outset confined to those whose supplies were found to be defective at the merchants' stores, but later two

other methods of covering the ground were tried out. One was to accompany, with the licence-holders' consent, an itinerant collector on his journey through the country, to examine the eggs as offered by the producer and to give instruction where required. The other plan was to call on *all* poultry keepers and to instruct them in the proper methods of dealing with their supplies. The latter plan was eventually adopted by the Ministry as being likely to give the best results.

In addition to the house-to-house visits, each instructor was required to keep in touch with licensed wholesale dealers, particularly the holders of Class "A" licences in his district, and to investigate any special cases where the result of testing, as shown on identificaton dockets, revealed unsatisfactory quality. Whilst in certain special cases it was found necessary to make more than one visit to the same farm, the instructor aimed at covering the maximum area. The whole area has now been covered in this way and over 27,000 visits were made.

The Ministry is satisfied that as a result of the work of these officers the supplies reaching Class "A" merchants are definitely of better quality. This is the immediate object of the scheme and this class of licensee is thereby enabled to turn out consignments in much better condition, both to retailers and for shipment. The reduction in waste in respect of stale and dirty eggs amply repays this outlay. In the main the work of the instructors was well received among producers.

During the period of maximum production in the year 1934 these officers concentrated their attention on the quality of producers' supplies whether in the hands of collectors or shippers, and where eggs of defective quality were found the officer concerned, after visiting the producer, reported the circumstances to the Ministry. In any instances in which it was found that instruction had not had the desired effect prosecutions were instituted.

In arranging for this extension of its educational services among producers the Ministry realised that much of the benefit resulting therefrom could be dissipated by undue delay in marketing by the collector type of licence-holder and, accordingly, the rule that such licence-holders must clear their purchases of eggs to Class "A" licence-holders within three days from the date of collection has been enforced resulting in an improvement in the quality of the supplies dealt with by shippers.

The following table shows the number of licences of each class issued during the three licensing years covered by this report :—

Year.	CLASS A.		CLASS B.
	Shippers.	Local Traders.	
1931/32	141	88	1,383
1932/33	145	82	1,408
1933/34	140	74	1,435

BROAD END UP PACKING.

During the course of an experiment in the year 1933 it was found that eggs packed broad-end up, either in transit or left undisturbed in store, remained in good condition longer than those packed broad-end down, other conditions being equal.

At the end of this experiment the evidence was so conclusive as to the benefits of this method of packing that the Ministry decided, in the interests of the trade, to make this method a statutory obligation.

RE-ORGANISATION OF METHOD OF MARKETING EGGS ON BRITISH MARKET.

At the end of the period under review the two Reorganisation Commissions had under consideration proposed Egg Marketing Schemes for :

(*a*) England and Wales ;
(*b*) Scotland.

Since these countries represent Northern Ireland's principal outlet for eggs, a liasion officer was appointed to keep the interests of Northern Ireland constantly before the Commissions.

The then Chairman of the Commission for England and Wales visited Northern Ireland in July, 1934, so that he might gain some first-hand information regarding egg production and marketing here. The Ministry took the opportunity of his visit to bring before him the representatives of the various interests concerned.

A Commission was later set up to consider Schemes embracing the whole of the United Kingdom and the terms of reference of this Commission included :—

(1) The relation of the proposed Scheme for England and Wales with that proposed for Scotland having regard to the existing position of Northern Ireland.
(2) The manner in which the operation of these Schemes might be facilitated by the restriction of imports from abroad.

This Commission has subsequently reported and partly in the light of its deliberations the Marketing of Eggs Act (Northern Ireland), 1936, has been passed.

MARKETING OF DAIRY PRODUCE ACTS, 1929 AND 1933.

The following table shows the registrations effected by the Ministry during the years 1932, 1933 and 1934 :

Description of Premises.	1932.	1933.	1934.
Auxiliary Creameries	78	74	74
Central Creameries	31	30	37
Butter Factories	8	8	–
Wholesale Depots	10	10	6

As foreshadowed in the previous Report, statutory regulations in regard to the qualifications and appointment of employees in auxiliary and central creameries were issued by the Ministry in January, 1932.

Two short refresher courses of instruction in dairying were held in February and March, 1932, at Lockpatrick and Fivemiletown, respectively, for the benefit of those managers in auxiliary creameries and assistant managers in central creameries, who were required to obtain the Ministry's " Assistant Creamery Manager's Certificate " before their appointments could be sanctioned. A printed syllabus for the Certificate Examination was issued, and in May examinations (written and oral) of candidates were held by the Ministry at Cookstown and Enniskillen. In the oral part of the examinations the Ministry's officers were assisted by a manager of a central creamery.

Similar examinations were held at suitable centres in the years 1933 and 1934.

In 1933 an Act was passed permitting central creameries on receipt of an authorisation from the Ministry to undertake the blending, reworking and cutting of creamery butter, whether imported or made on the premises or not provided, of course, the butters to be used for this purpose were of a quality not inferior to " Standard " as prescribed by the Ministry's regulations. Markings prescribed under the Merchandise Marks Act and Orders must be used in cases where imported butter is used.

This Act also conferred power on the Ministry to refuse registration in cases in which it was proposed to erect creameries in areas which in the opinion of the Ministry, were well enough equipped with creameries, having regard to the supply of milk available.

Consequent on this change in the legislation, amended Rules under the Acts were made.

SURPRISE INSPECTIONS OF BUTTER 1932, 1933 *AND* 1934.

All inspections of butter in the years 1932, 1933 and 1934 were held in Northern Ireland owing to the fact that the greater part of the butter made by the Northern Ireland creameries is sold for consumption in the Six Counties.

The inspections were conducted in accordance with the provisions of the Marketing of Dairy Produce (Surprise Inspections of Butter) Rules (Northern Ireland), 1931.

In the summer months, when butter was plentiful, creameries were asked to submit 56lb. boxes of butter, and in the winter months pound rolls.

In the year 1932 the total number of samples examined was 398. Of these, 67.86 per cent. were adjudged to be of "premium" quality, 16.31 per cent. of "standard" quality and 15.83 per cent. "below standard." Two inspections were held in Omagh, one in Coleraine, and one in Enniskillen, and the remainder in Belfast.

In the year 1933 the total number of samples examined was 390. Of these, 67.87 per cent. were adjudged to be of "premium" quality, 18.39 per cent. of "standard" quality, and 13.74 per cent. "below standard." All samples were examined in Belfast.

In the year 1934 the total number of samples examined was 402. Of these, 68.18 per cent. were adjudged to be of "premium" quality, 15.86 per cent. of "standard" quality, and 15.96 per cent. "below standard." All samples were examined in Belfast.

There has been an appreciable decrease in the number of samples adjudged "below standard" since the year 1922. The following are the percentages from that year to 1934:—31.86, 31.03, 29.87, 24.18, 32.27, 15.87, 19.94, 10.88, 13.40, 15.69, 15.83, 13.74 and 15.96.

The creameries, generally, have shown a considerable interest in the judging of their samples each month, and the results give a very useful indication of the quality of butter made or handled by the creameries.

MARKETING OF POTATOES ACTS (NORTHERN IRELAND), 1928 AND 1934.

During the shipping seasons of 1931/32, 1932/33 and 1933/34 the undermentioned quantities of potatoes were inspected and certified prior to shipment:—

	1931/32.	1932/33.	1933/34.
	tons.	tons.	tons.
Great Britain	128,300	143,300	108,832
Malta	4,400	3,520	4,054
Spain and Canary Islands ..	1,400	4,500	2,573
Irish Free State	5,100	140	11
Cyprus	439	720	467
Portugal	128	408	7,152
Other Countries	1,033	1,352	1,832
Totals	140,800	153,940	124,921

The decrease in the quantity shipped in the 1933/34 season was due to the fact that the potato crop in Great Britain was particularly heavy with the result that a poor demand for potatoes from Northern Ireland was experienced in that year.

The Marketing of Potatoes Act, 1934, which came into operation on the 1st September (of that year) provides that potatoes sold, or offered or exposed for sale, in any prescribed area in Northern Ireland shall be of the prescribed standard of quality and The Marketing of Potatoes Rules (Northern Ireland), 1934, have been made under this Act which include standards of grading, packing and quality for potatoes sold

within the County Borough of Belfast. Since these rules came into operation a number of inspections of potatoes have been carried out by the Ministry's Potato Inspectors in the Belfast Market, and it is clear that the quality of the potatoes now passing through that market shows a very decided improvement.

The Act of 1934 also provides that a licence to ship potatoes from Northern Ireland to Great Britain or the Isle of Man shall be renewable annually, and shall be subject to the payment of a yearly licence fee of £5. In addition, it is provided that every licensed merchant at the time of the granting or renewal of a licence shall forward to the Ministry a sum of £15 which shall be regarded as an advance on account of inspection fees to be incurred during the period of validity of the licence.

Inspection of Growing Crops of Potatoes.

The voluntary inspection of growing crops of potatoes was carried out as usual during the period under review, and it is gratifying to observe that the scheme is being more widely supported in each successive season. This is clearly shown by the increasing acreages in respect of which purity certificates were issued, viz. :—

Year.	Immune varieties.	Non-immune varieties.	Total.
	Acres.	Acres.	Acres.
1932	3,700	3,745	7,445
1933	4,648	4,044	8,692
1934	6,185	5,415	11,600

All crops of potatoes planted in scheduled areas were also inspected when growing and certificates issued for crops which reached the requisite standard of purity.

AGRICULTURAL PRODUCE (MEAT REGULATION) ACT (NORTHERN IRELAND), 1930.

During the period 1st October, 1931, till 30th September, 1934, the above-mentioned Act operated satisfactorily. During the year 1931–2, 110 licences were issued by the Ministry authorising the business of curing bacon and hams. During 1932–3, 113 licences were issued and 104 were issued during 1933–34. On behalf of the holders of these licences 398,000 carcases were inspected by Veterinary Inspectors of this Ministry during 1931–2 ; 368,520 during 1932–3 and 394,464 during 1933–4. Licences authorising the sending of fresh meat to Great Britain, the Irish Free State and the Isle of Man, have been issued as shown below :—

1931–2	37
1932–3	30
1933–4	31

Twenty-nine slaughtering premises have been registered under the Act where animals may be slaughtered by holders of fresh meat licences for export to Great Britain. At these premises, the following ante and post-mortem inspections have been carried out by Veterinary Inspectors of the Ministry :—

Year. (1st October to 30th September).	Cattle.	Sheep.	Swine.
1931–2	116	925	26,963
1932–3	6	255	7,738
1933–4	—	46	10,544

A licensed exporter of fresh meat substituted and exported an uninspected carcase for one that had been inspected by a Veterinary Inspector of the Ministry. The offender was prosecuted and convicted, fines amounting to £20 and costs being imposed, and his licence was revoked by the Ministry.

AGRICULTURAL PRODUCE (MEAT REGULATION) RULES (NORTHERN IRELAND) NO. 2, 1931.

It was brought to the notice of the Ministry that sufficient attention was not being paid by holders of licences under the Agricultural Produce (Meat Regulation) Act (Northern Ireland), 1930, to the packages, wrappers, cases, containers, casks, crates and other receptacles used in the conveyance of meat as regards their cleanliness and strength. An addition was, therefore, made to the Rules requiring that all such containers must be thoroughly clean and of sufficient strength to stand handling in transit. The use for the packing of meat of any container which has had in it chloride of lime or any other substance likely to contaminate the meat is prohibited.

AGRICULTURAL PRODUCE (MEAT REGULATION) RULES (NORTHERN IRELAND), 1934.

Owing to several cross-Channel complaints being received it was found necessary to make the above-mentioned Rules whereby no diseased, emaciated or unsound poultry carcases may be sent from Northern Ireland to Great Britain, the Irish Free State and the Isle of Man and that all packages containing dead poultry should be clean.

MARKETING OF FRUIT ACT (NORTHERN IRELAND), 1931.

During the three-year period under review 58 licences were issued to merchants to enable them to ship graded fruit to Great Britain. Of these licences, which are renewable annually, 30 were in operation at the end of the period, the decrease in numbers being due to the relatively small crop of apples in Northern Ireland in 1933, coupled with the fall in cross-Channel prices.

In addition, 177 permits were issued to growers to enable them to ship fruit of their own growing. Of this number 162 were for graded fruit and 15 for ungraded fruit for manufacturing purposes. Twenty-nine permits were issued to merchants for the shipment of ungraded fruit for manufacturing purposes. Permits issued for the shipment of apples in chip baskets numbered 5 and dessert fruit permits numbered 5 also.

The inspection of fruit presented for shipment was carried out during the seasons by the Ministry's Horticultural Inspectors, and it was found necessary in a few cases to request the consignors to repack the consignments in order that they might comply with the standards of grading, packing and quality laid down in the Marketing of Fruit Rules. In other cases where the consignments were open to objection warning letters were issued to the consignors drawing attention to the necessity of complying fully with the requirements of the regulations.

In September, 1933, the Ministry, after consultation with the Fruit Advisory Committee, made certain changes in the standards of grading and quality required to be observed by licence and permit holders. The principal alterations were that the minimum diameter of the apples which would be permitted to be shipped under the standards C. and F. was raised by $\frac{1}{4}$ inch. This in effect means that only apples having a minmum diameter of $2\frac{1}{4}$ inches are now permitted to be shipped.

With regard to the fruit sold, or offered, or exposed for sale in Northern Ireland it was found necessary during the period under review to have recourse to legal proceedings in 30 cases, particulars of which are set out below.

Year.	Nature of Offence.	
	Topping Strawberries.	Topping Apples.
1931/32	—	—
1932/33	8	5
1933/34	10	7

Convictions were obtained in twenty-nine cases.

In September, 1934, the Ministry made the Marketing of Fruit Rules (Northern Ireland), 1934, which prescribe the nature of the packing which may be used in exposing apples for sale in hampers or baskets to a retailer for resale by him in Northern Ireland, and also provide that after the 1st July, 1937, only hampers or baskets which conform in dimensions to certain standards which have been laid down will be permitted to be used for the sale of apples.

MERCHANDISE MARKS ACTS 1887-1926.

Three further Orders-in-Council were made under the provisions of the abovementioned Acts since the issue of the last Report. These Orders require the marking with an indication of origin of (a) imported butter (including blends or mixtures of butters which consist of or contain imported butter), (b) imported bacon and ham, and (c) imported dead poultry.

The agricultural and horticultural products which have been dealt with in Orders-in-Council under the Merchandise Marks Acts are as follow :—

(1) Fresh Apples.
(2) Currants, Sultanas and Raisins.
(3) Eggs in shell.
(4) Dried Eggs.
(5) Oat products.
(6) Raw tomatoes.
(7) Honey.
(8) Butter.
(9) Rose trees.
(10) Malt products.
(11) Bacon and ham.
(12) Dead poultry.

The Ministry found it necessary to institute a number of prosecutions against traders for non-observance of these Orders during the period covered by this report.

AGRICULTURAL MARKETING ACTS, 1931 TO 1934.

Under the Agricultural Marketing Act, 1931, passed by the Imperial Government, a Scheme regulating the marketing of an agricultural product may be submitted to the Minister of Agriculture and Fisheries by any body of persons representing substantially the producers of the product in the area to which the Scheme is applicable. In addition the Minister may constitute one or more Re-organisation Commissions and charge them with the duty of preparing Schemes for regulating the marketing of agricultural products. Before becoming operative every Scheme, in addition to complying with certain conditions, must obtain the approval of Parliament and of a requisite majority of producers of the product concerned.

A further Act was passed in 1933, known as the Agricultural Marketing Act, 1933, which empowers the Board of Trade, after consultation with the Minister of Agriculture and Fisheries and with the Secretaries of State concerned with agriculture in Scotland and Northern Ireland respectively, to make an order regulating the importation into the United Kingdom of any agricultural product where it appears that there have been, or are being, taken all such steps as are practicable and necessary for the efficient reorganisation by means of Schemes of those branches of the agricultural industry in the United Kingdom in whose interests the order is made, and where it further appears that without such an order the effective organisation and development of the said branches of the agricultural industry in the United Kingdom under such Schemes cannot be brought about or cannot be maintained.

In order that the producers of Northern Ireland might share with their compatriots in Great Britain the benefits expected to accrue from the adoption of the policy envisaged in the afore-mentioned legislation there was introduced in the Northern Ireland Parliament in April, 1933, a measure sponsored by the Ministers of Agriculture and Commerce and dealing with the framing and approval of Schemes for regulating the marketing of any agricultural product in Northern Ireland.

It was in these circumstances that the Agricultural Marketing Act (Northern Ireland), 1933, became law on the 13th June, 1933.

Under this Act power is given to the Ministry of Agriculture to frame a Scheme regulating the marketing of any agricultural product in Northern Ireland, if the Ministry is satisfied that such a Scheme is necessary for the more efficient production and marketing of that product. In any case where, as a consequence of the restriction of imports of an agricultural product into the United Kingdom, an order has been made by the British Government regulating sales of that agricultural product in Great Britain it is compulsory for this Ministry to frame a complementary Scheme for operation here.

The Act provides that in framing a Scheme the Ministry must take into consultation producers of the product to be dealt with in the Scheme, and also any other persons who may be affected thereby. Any person interested may make an objection to the Scheme, and if the Scheme is not modified in accordance with the objection the Ministry must hold a public enquiry for the investigation of the objection. It is, therefore, only after the fullest consultation with the agricultural community that an order is made approving the Scheme. Immediately an order has been made the Scheme must be submitted to Parliament and may be revoked by a resolution of either House if Parliament is not satisfied that it is suitable for Northern Ireland conditions. The continuance in operation of a Scheme for a period of more than two years is dependent upon each House of Parliament passing a resolution approving the Scheme.

The administration of a Scheme is entrusted to a Marketing Board consisting of a number of members elected by registered producers of the product regulated by the Scheme, together with three other members nominated by the Minister of Agriculture. The exact powers conferred upon such a Marketing Board depend upon circumstances and may vary with different boards. In general, however, a Marketing Board may have the power to determine the descriptions of the regulated product which may be sold by any producer, the price at, below or above which, the terms on which, and the persons to or through the agency of whom, the regulated product or any description or quantity thereof may be sold.

The Pigs And Bacon Marketing Schemes.

In October 1932 the Reorganisation Commission for Pigs and Pig Products set up under the chairmanship of Colonel G. R. Lane Fox (now Lord Bingham), reported its findings and submitted Schemes for regulating the marketing of bacon and bacon pigs in Great Britain.

Following the publication of this Report, the Pigs and Bacon Marketing Boards in Great Britain were set up in September, 1933. Pig producers were called upon to register with the Board and sales of pigs for conversion into bacon were prohibited except under contract approved by the Board. The fresh pork market was, however, permitted to operate without any restriction. Prices for the different grades of bacon pigs were fixed by the Boards. Steps were also taken to limit the importation of bacon and hams in order to permit of an economic price being obtained for the home-produced article.

The powers conferred upon it by the Agricultural Marketing Act (Northern Ireland), 1933, were utilised by the Ministry to frame Schemes applicable to Northern Ireland and in due course these Schemes were approved and came into operation on the 1st October, 1933.

The Pigs Marketing Scheme (Northern Ireland), 1933, is an attempt to provide the machinery necessary to effect the more efficient production and marketing of pigs in Northern Ireland and thus to secure for Northern Ireland producers the benefits which are expected to be obtained as a result of the control and limitation of imports of bacon and hams from abroad. The Board administering the Scheme has the general powers mentioned earlier in the article and possesses trading as well as regulatory powers. Furthermore, the Board must buy all live pigs offered to it by registered producers, and must pay the price fixed by the Board for the appropriate grade of pigs, less deductions for marketing and administrative expenses. One important difference between the Pigs Marketing Schemes in Northern Ireland and in Great Britain is that in Northern Ireland sales by contract are not compulsory.

The Board administering the Bacon Marketing Scheme (Northern Ireland), 1933, was a regulatory Board and had powers to determine from time to time the description and quantity of bacon (including hams, etc.) which may be sold by any producer.

CONSTITUTION OF BOARDS—ELECTIONS.

The Pigs Marketing Board and the Bacon Marketing Board* consist each of 14 members, and in the case of the original Boards which administered the schemes from their inception to the 31st March, 1934, all the members were nominated by the Minister of Agriculture. The first Chairman of the Pigs Marketing Board was Dr. James S. Gordon, C.B.E., who relinquished his post as permanent secretary to the Ministry in order to take up the duties of principal officer and chairman of the Board. Mr. Kenneth D. L. Sinclair was appointed as Chairman of the Board nominated to administer the Bacon Marketing Scheme. Mr. Sinclair subsequently resigned and Mr. J. D. Caruth, J.P., was appointed to fill the vacancy.

The original Boards were composed of the following members :—

Pigs Marketing Board (Northern Ireland).

J. S. Gordon, Esq., C.B.E., D.Sc., Stragollen, Strabane (Chairman).
H. A. M. Barbour, Esq., M.A., Strathearne, Dunmurry.
G. Chesney, Esq., Ballynafie, Portglenone.
J. Graham, Esq., J.P., Derryane House, Derrylee, Dungannon.
M. M. McCausland, Esq., H.M.L., J.P., Drenagh, Limavady.
Sir Dudley McCorkell, M.B.E., D.L., J.P., Ballyarnett, Londonderry.
A. McGuckian, Esq., Cloughmills.
Charles Magee, Esq., Carnmeen, Newry.
John M. Mark, Esq., M.P., The Banks, Limavady.
Rev. R. Moore, B.A., Ballymacannon, Macosquin, Coleraine.
Robert Rusk, Esq., J.P., Cavanaleck, Fivemiletown.
Captain T. H. Wallace, M.C., LL.B., J.P., Bishopscourt, Dromore.
Matthew J. Wauchob, Esq., J.P., Laraghs, Newtownstewart.
David Wright, Esq., J.P., The Moat, Dundonald.

Bacon Marketing Board (Northern Ireland).

K. D. L. Sinclair, Esq., 7 Tomb Street, Belfast (Chairman).
H. A. M. Barbour, Esq., M.A., Strathearne, Dunmurry.
David Bennett, Esq., Basin Walk, Newry.
W. F. Bigger, Esq., Foyle Street, Londonderry.
R. N. Boyd, Esq., 1 Lilliput Road, Belfast.
J. D. Caruth, Esq., J.P., Ballymena.
J. H. Finlay, Esq., 34 Ann Street, Belfast.
Patrick Gilliland, Esq., 40 Townsend Street, Belfast.
J. S. Gordon, Esq., C.B.E., D.Sc., Stragollen, Strabane.
James Mark, Esq., Foyle Street, Londonderry.
Sir Dudley McCorkell, M.B.E., D.L., J.P., Ballyarnett, Londonderry.
William S. McLaughlin, Esq., J.P., Enniskillen.
Fred. C. Robinson, Esq., 169 and 173 York Street, Belfast.
Samuel Skelly, Esq., 15 Hamilton Place, Belfast.

The Pigs Marketing Board which took office on the 1st April, 1934, was composed of 3 members nominated by the Minister of Agriculture and 11 members elected by registered producers in the various county electoral divisions as follows :—

County Antrim—3. County Armagh—1. County Down—2. County Fermanagh—1. County Londonderry—2. County Tyrone—2.

The election was carried out by the Ministry and was conducted by post in accordance with the regulations set out in the Scheme. It is interesting to note that over 24,000 or 80 per cent. of the registered producers exercised their right to vote. The new Board comprised the following members :—

APPOINTED MEMBERS.

J. S. Gordon, Esq., C.B.E., D.Sc., Stragollen, Strabane (Chairman).
H. A. M. Barbour, Esq., M.A., Strathearne, Dunmurry.
Sir Dudley McCorkell, M.B.E., D.L., J.P., Ballyarnett, Londonderry.

*The Bacon Marketing Board was wound up in 1934 after the Agricultural Marketing (Pig Industry) Act, 1934, was passed.

ELECTED MEMBERS.

Co. Antrim.
G. Chesney, Esq., Ballynafie, Portglenone.
A. A. McGuckian, Esq., Cloughmills.
John Sterling, Esq., Ross, Kells, Ballymena.

Co. Armagh.
J. Graham, Esq., J.P., Derryane House, Derrylee, Dungannon.

Co. Down.
A. E. Swain, Esq., New Orchard, Moira.
Captain T. H. Wallace, M.C., LL.B., J.P., Bishopscourt, Dromore.

Co. Fermanagh.
James McElroy, Esq., J.P., Duross, Lisnarick, Irvinestown.

Co. Londonderry.
Michael J. Henry, Esq., Lisnagrot House, Kilrea.
Rev. R. Moore, B.A., The Manse, Cashel, Macosquin, Coleraine.

Co. Tyrone.
Rowley Elliott, Esq., M.P., Craigon House, Coagh.
John Joseph McMahon, Esq., Ballygawley.

The Bacon Marketing Board, which took up office on the same day, also comprised 14 members of whom three were nominated. The election was conducted by post and voters were divided into three classes, viz., large, medium and small, according to the numbers of pigs cured by the different concerns in 1933.

The new Board contained the following members :—

APPOINTED MEMBERS.
John J. Buchanan, Esq., c/o. Messrs. Buchanan Brothers, Londonderry.
J. H. Finlay, Esq., 34 Ann Street, Belfast.
J. S. Gordon, Esq., C.B.E., D.Sc., Stragollen, Strabane.

ELECTED MEMBERS.
David Bennett, Esq., c/o. The Newry Bacon Curing Company, Basin Walk, Newry.
W. F. Bigger, Esq., c/o. Messrs. Biggers Ltd., Foyle Street, Londonderry.
R. N. Boyd, Esq., 1 Lilliput Road, Belfast.
Jas. D. Caruth, Esq., J.P., c/o. Messrs. McCartney & Son, Ltd., Ballymena. (Chairman).
Thomas Forde, Esq., Jnr., c/o. Messrs. Thos. Forde & Co., Belfast.
Wm. Gordon, Esq., c/o. Messrs. W. & J. Gordon Limited, 27, Church Lane, Belfast.
James Mark, Esq., c/o. Messrs. Mark, Roulston & McLaughlin, Foyle Street, Londonderry.
Robert Morton, Esq., c/o. Messrs. Morton & Simpson, Ltd., Ballymena.
Wm. S. McLaughlin, Esq., J.P., c/o. The Scottish Co-op. Wholesale Society, Enniskillen.
K. D. L. Sinclair, Esq., c/o. Messrs. J. & T. Sinclair, 7, Tomb Street, Belfast.
Samuel Skelly, Esq., c/o The Belfast Curing Company, 15, Hamilton Place, Belfast.

In June, 1934, the curing industry suffered the loss, through death, of Mr. Fred C. Robinson, who was one of the members of the original Bacon Marketing Board and who through failing health did not seek election to the succeeding Board. The demise in September, 1934, of Mr. W. S. McLaughlin, J.P., General Manager of the Scottish Co-operative Wholesale Society Limited, Enniskillen, deprived the Board of the services of one who had been a member of the original Board, and who had been elected in the previous February to represent producers in the medium class.

ADMINISTRATIVE LEVIES.

The Act requires that all expenses properly incurred by the Boards in operating the Schemes must be met by levies on the sale of the regulated product. Accordingly as from the 1st October, 1933, all sales of pigs by producers to registered curers or to the Pigs Marketing Board are subject to a levy of 2/- per pig to cover the administrative cost of that Board. In February, 1934, the levy was extended to cover sales by producers to dealers registered with the Ministry. It may be mentioned that less than 6d. of the 2/– levy was necessary for the administrative expenses of the Board, the balance being used to build up a reserve and consolidate the Board's financial position. The initial levy chargeable to bacon curers in respect of the Bacon Marketing Board was 1½d. per carcase and was increased to 3d. per carcase in April, 1934.

COMPENSATION TO CURERS FOR LOSSES.

Notwithstanding the limitation of bacon and ham imports into the United Kingdom, public confidence in the efforts to reorganise the industry was shaken at the inception of the Scheme by an unexpected glut in the home markets which made it impossible for curers to purchase economically at the standard price. It was at this stage that the Northern Ireland Government, in conjunction with that in Great Britain, came to the rescue of the industry and guaranteed the curers against any loss entailed by adhering to this price. It was decided that so long as the curers observed the standard price and maintained their purchases of pigs they would be recouped their losses on such purchases by means of a Government guaranteed loan which would be paid off at a later date by contributions from pig producers. This action had the desired effect of surmounting the difficulties at that period and of re-establishing confidence in the Scheme.

The Government implemented its promise to the industry by passing the Agricultural Marketing Act (Northern Ireland), 1934, which became law on 5th June, 1934, and which enables the Ministry by order to empower the Pigs Marketing Board to grant to the Bacon Marketing Board the money necessary to repay the principal and interest of a loan raised by the latter Board to recoup the curers for the afore-mentioned losses. The same order made provision for the imposition of a special compensation levy upon producers in order to raise the requisite sums for this purpose.

Upon negotiations between the Pigs and Bacon Marketing Boards in Northern Ireland, the sum of 5/– was accepted as the rate of compensation payable in respect of each pig purchased by registered curers during the period 16th September to 31st December, 1933, provided that the standard price was paid. The total principal sum involved in Northern Ireland was £26,664 : 5 : 0, representing the purchase of 106,657 pigs. It may be mentioned that in Great Britain the compensation figure arrived at was at the rate of 7/5 per pig.

PIG DEALERS.

The Marketing of Pigs (Registration of Dealers) Regulations (Northern Ireland), 1934, came into operation on the 12th February, 1934. Under these regulations the Ministry compiled a Register of Dealers and every dealer was given the opportunity to have his name entered therein. Only persons who had obtained the approval of the Ministry and registered pig dealers were authorised to remove pigs to Great Britain. As already stated, the administrative levy of 2/- per pig has been chargeable as from this date in respect of all pigs sold by producers to registered dealers.

On the same date, viz., 12th February, 1934, the Marketing of Pigs (Form of Dealers' Returns) Order (Northern Ireland), 1934, came into operation. In accordance with this order registered pig dealers are required to furnish to the Ministry each week certain particulars regarding their trade.

The Agricultural Marketing (Removal of Pigs) Regulations (Northern Ireland), 1934.

In the early part of 1934, a considerable increase took place in the shipment of live pigs to Great Britain, owing to the abnormal conditions then prevailing in the cross-Channel markets. As a consequence local bacon curers found it impossible to purchase adequate supplies of pork at standard prices to fill the quota of bacon production allotted to them. Failure to fill this quota in any particular period may entail a reduction in the allotment in subsequent periods, and it was, therefore, of the utmost importance to ensure, so far as was practicable, that sufficient supplies of pigs were available.

Representations were also made by both the Pigs and Bacon Marketing Boards requesting that the Ministry should take the necessary steps under Section 14 of the Agricultural Marketing Act (Northern Ireland), 1933, and Section 28 (1) of the Agricultural Marketing Act, 1933 (Imperial Parliament) to regulate the shipment of live pigs. Section 28 prescribes, *inter alia*, that legislation enacted by the Parliament of Northern Ireland enabling schemes to be made for regulating the marketing of agricultural products may, notwithstanding any limitation imposed by Section 4 of the Government of Ireland Act, 1920, on the power of the said Parliament to make laws, enable regulations to be made for regulating the removal from Northern

Ireland into Great Britain of any agricultural product, the marketing of which is regulated by a Scheme. Such regulations have effect only if and so long as there is in force a certificate given by the Secretary of State concerned with agriculture in Northern Ireland certifying that it is expedient that the scheme or regulations should have full effect.

The Ministry, after full consideration of all the circumstances, decided that the interests of the industry generally would be best served by regulating the volume of shipments of live pigs and accordingly drew up the Agricultural Marketing (Removal of Pigs) Regulations (Northern Ireland), 1934, which came into operation on the 20th March, 1934. The abnormal conditions in the British markets which caused the increase in shipments were only of very temporary duration and the restrictions on shipments were removed during the following May. The regulations are, however, still in force and pigs may be shipped only after approval has been obtained from the Ministry. In this manner, the Ministry endeavours to ensure that home interests will not be prejudiced by excessive shipments at any particular time and that Northern Ireland may be in a position to co-operate fully in any general quota arrangements in the production of bacon within the United Kingdom.

The Acts and Orders in connection with this phase of agricultural marketing which were in operation on 30th September, 1934, were as follows :—

Agricultural Marketing Act (Northern Ireland), 1933.
Agricultural Marketing Act (Northern Ireland), 1934.
The Agricultural Marketing (Public Inquiry) Regulations (Northern Ireland), 1933 (*S.R.O.* 86/1933).
The Pigs Marketing Scheme (Northern Ireland) (Approval) Order, 1933, dated 6th September, 1933. (S.R.O. 93/1933).
The Bacon Marketing Scheme (Northern Ireland) (Approval) Order, 1933, dated 20th September, 1933. (S.R.O. 99/1933).
The Pigs Marketing Scheme (Northern Ireland) (Amendment) Order, 1934, dated 15th January, 1934. (S.R.O. 9/1934).
The Marketing of Pigs (Registration of Dealers) Regulations (Northern Ireland), 1934, dated 1st February, 1934. (S.R.O. 16/1934).
The Marketing of Pigs (Form of Dealers' Returns) Order (Northern Ireland), 1934, dated 8th February, 1934. (S.R.O. 19/1934).
The Agricultural Marketing (Removal of Pigs) Regulations (Northern Ireland), 1934, dated 19th March, 1934. (S.R.O. 27/1934).

The Market Supply Committee.

This Committee was set up under Section 3 of the Agricultural Marketing Act and was appointed by the Minister of Agriculture and Fisheries and the Secretaries of State concerned with agriculture in Scotland and Northern Ireland. The duty of the Committee is to review generally the circumstances affecting the supply of agricultural products in the United Kingdom and to make recommendations to the appointing authorities as to any steps which ought, in the opinion of the Committee, to be taken for regulating that supply and, in particular, to give "the appointing authority" advice and assistance in connection with the discharge of their functions under Part 3 of the Act and of any arrangements made for controlling the importation of an agricultural product into the United Kingdom.

In accordance with the terms of the Act, the Committee consists of a chairman and not more than four other persons and the first statutory meeting of the Committee was held on 1st December, 1933. During the period under review the Committee held thirteen meetings and submitted a series of reports dealing with the supply position of bacon and hams, eggs, lard, processed milks, potatoes, apples and pears, chilled beef and frozen boneless beef.

REGULATION OF IMPORTATION OF AGRICULTURAL AND HORTICULTURAL PRODUCE IN THE UNITED KINGDOM.

The Horticultural Products (Emergency Customs Duties) Act, 1931, was passed into law by the Imperial Parliament in December, 1931. The object of the Act was to reduce the importation into the United Kingdom of certain classes of fresh fruit, fresh vegetables and other horticultural products, the production of which in the United Kingdom could be increased, or which are articles of luxury. Duties were chargeable up to a maximum of 100 per cent. and the life of the Act was limited to twelve months. Provision was also made for the exclusion from its scope of certain articles of Empire origin.

This Act was followed by the Import Duties Act, 1932, which became operative on the 1st March, 1932. The Act imposed as from that date a customs duty of 10 per cent. of thevalue of all goods imported into the United Kingdom, with the exception of articles specified in the free list, and goods for the time being chargeable with a duty of customs under any other enactment. The list of articles admitted free included wheat, meat and wool. The Act also provided for the imposition of additional duties, over and above the 10 per cent., on certain classes or descriptions of goods, by order of the Treasury on the recommendation of the Import Duties Advisory Committee. Goods from the Colonies and Protectorates were exempted from duty ; and goods from the self-governing Dominions, India and Southern Rhodesia, were to be admitted free of duty until November 15, 1932, or such later date as might be fixed by the Imperial House of Commons. Certain imports which were chargeable with duties under the Horticultural Products Act were not subject to duty under this Act during the periods they were chargeable under the previous Act.

TRADE AGREEMENT.

The Imperial Economic Conference was held at Ottawa in the summer of 1932, and as a result draft Agreements were concluded between the United Kingdom and various Dominions and India.

The principal results of these Agreements in so far as they affect home agriculture may be summarised as follows :—

Free entry into the United Kingdom markets after the 15th November of the produce of Dominions which completed agreements.

A minimum duty of 10 per cent. *ad valorem* to be maintained on certain foreign imports and additional duties on other foreign agricultural products.

Special arrangements regarding the importation of meat.

Speaking generally, the Agreements are of five years' duration, but the United Kingdom reserved the right after the expiration of three years, if they considered it necessary in the interests of the United Kingdom producer to do so, to review the basis of preference, either to impose a preferential duty while maintaining existing preferential margins or to regulate imports.

Agricultural commodities in respect of which special duties were agreed upon at Ottawa included the following :—

Wheat in grain	..	2/– per quarter.
Butter	..	15/– per cwt.
Cheese	..	15 per cent. *ad valorem*.
Apples and Pears (raw)	..	4/6 per cwt.
Apples (canned)	..	3/6 per cwt. in addition to duty on sugar content.
Eggs in shell	..	1/– to 1/9 per hhd. according to grade.

Apples imported for the manufacture of cider are not subject to this duty provided certain prescribed conditions are complied with.

Australia and New Zealand entered into arrangements with the British Government with regard to the importation of certain classes of meat into the United Kingdom markets and the proposals were embodied in an "agreed programme" with each Dominion. During the period January, 1933, to June, 1934, supplies of frozen mutton and lamb and frozen beef were to be reduced progressively from 90 per cent. to 65 per cent. of the imports for the year ended June, 1932. In the case of foreign chilled beef the same rate of importation as took place in the year ended June, 1932, was allowed. Subject to the implementing of this programme and the restriction later of foreign bacon and hams Australia agreed not to increase her imports of frozen mutton and lamb and to restrict any increase in frozen beef to 10 per cent. New Zealand was free to increase slightly her exports of frozen mutton and lamb. The life of this programme was limited to 18 months as from 1st January, 1933.

The Agreement with the Canadian Government included a provision that free entry of Canadian bacon and hams up to a maximum of 2,500,000 cwts. per annum would be permitted, irrespective of any regulations relating to the general importation of bacon and hams.

Agreement was not reached between the Irish Free State and United Kingdom Governments and accordingly the free entry of produce from this country ceased on

the 15th November, 1932. The duties imposed under the Import Duties Act, 1932, are additional to those under the Irish Free State (Special Duties) Act, 1932.

Following this Conference, the United Kingdom Government entered into negotiations with a number of foreign countries, notably Denmark and Argentine. The Agreements cover generally a period of three years.

In return for a guarantee that the existing duties on a long list of specified articles will not be increased and that other articles will be admitted free to Danish markets, the United Kingdom Government undertook that Danish imports, mostly agricultural, into British markets would not be subjected to higher duties than those then in force. The position of Denmark as an exporter of agricultural produce to the British market was recognised. In the event of regulations being introduced regarding the importation of bacon and hams the Danish allocation was stabilised at not less than 62 per cent. of the total permitted from foreign countries. Danish butter imports were also placed at a minimum of 2,300,000 cwts. in any one year. The Danish allocation of eggs was fixed at 5½ million hhd. per annum or, alternatively, in certain circumstances, not less than 38 per cent. of the total foreign imports.

The other Agreements were on similar lines.

Following recent legislation in relation to home agriculture, the United Kingdom Government has found it necessary to apply certain reservations contained in the Agreements which permitted it to regulate imports in order to secure the effective operation of schemes for the regulation of the marketing of home supplies.

MILK AND MILK PRODUCTS ACT (NORTHERN IRELAND), 1934.

The Milk and Milk Products Act (Northern Ireland), 1934, which forms the statutory basis of the Northern Ireland Milk Scheme, received the Royal Assent on the 28th June, 1934, but did not come into operation in so far as it relates to the sale of milk, butter and margarine under licences granted by the Ministry of Agriculture, until the 16th December, 1934, the date appointed by the Minister of Agriculture under Section 14 of the Act (S.R. & O. (Northern Ireland), 1934, No. 103 and 114).

The Act provides that all milk must be sold under one of the four designations Grade A, Grade B, Grade C or Grade D. Standards are prescribed for each of the first three grades, milk not belonging to any one of these being milk of Grade D. The cows from which Grade A milk is produced must have passed a double intradermal tuberculin test and the cows from which milk of Grade B or Grade C is produced must be clean and healthy and show no clinical symptoms of tuberculosis. In addition the Ministry of Agriculture is authorised to prescribe tests for milk of Grades A, B and C, which are the only grades which can be sold for human consumption. Under this authority the Ministry has prescribed standards for these three grades of milk as follows :—

Grade A.
The milk shall not contain more than 100,000 bacteria per cubic centimetre and no *Bacillus coli* shall be found in one-hundredth part of a cubic centimetre.

Grade B.
The milk shall not contain more than 300,000 bacteria per cubic centimetre and no *Bacillus coli* shall be found in one-hundredth part of a cubic centimetre.

Grade C.
The milk, when submitted to the methylene blue reductase test, shall not be reduced in less than three hours.

Section 2 of the Act provides that milk of Grades A, B and C may not be sold except by a person holding a licence from the Ministry of Agriculture, being either a producer's licence or a distributor's licence. The fee for a producer's licence is 2/6 per annum and in addition there is payable a sum, not being in the case of a licence for milk of Grade A or Grade B higher than 1d. per gallon, or in the case of a licence for milk of Grade C higher than 3d. per gallon, in respect of milk sold or delivered, otherwise than for the purpose of the extraction of cream for sale as such or for manufacture into butter at a creamery. The additional sum prescribed for the period 16th

December, 1934, to 11th May, 1935, was one-tenth of a penny per gallon for milk of Grade A, 1d. per gallon for milk of Grade B, and 3d. per gallon for milk of Grade C. The fee for a distributor's licence is £1 per annum, and a distributor is required to collect from the producer the producer's licence fees in respect of milk produced by him and to transmit these fees to the Ministry.

Section 4 of the Act relates to the licensing of sellers of butter and margarine. This section makes it an offence for any person to sell butter or margarine unless he holds a licence from the Ministry. Farmers, however, and retailers who purchase their supplies from licence holders or from farmers, are exempt from this provision. The fee for a licence is £1 per annum and in addition a sum, not being in any case higher than 5/- per cwt. of butter or margarine sold to a person other than a licence holder, is payable. The additional sum prescribed was 4/8 per cwt., except where the butter or margarine was sold for manufacturing purposes, in which case the rate is 1d. per cwt.

Section 5 of the Act provides for the constitution of a Joint Milk Council. The Council consists of the following persons :—

Three members appointed by the Minister of Agriculture of whom one is Chairman of the Council ;
Three representatives of milk consumers appointed by the Minister of Home Affairs ;
Seven members elected by the holders of producers' licences, and
Four members elected by holders of distributors' licences.

The principal duty of the Council is to prescribe the prices at, below, or above which milk of Grade A, Grade B or Grade C may be sold by the holder of a producer's licence or a distributor's licence. Retail prices are subject to the approval of the Ministry of Agriculture and the Council is not authorised to fix prices in respect of milk sold to creameries.

Section 11 of the Act provides for the setting up of a Milk Fund and into this fund there are paid—

(*a*) all sums received under the Act by the Ministry of Agriculture, *e.g.*, licence fees, fines, etc., and
(*b*) any grant payable under an Act of the Parliament of the United Kingdom for the assistance of the milk industry in Northern Ireland, *e.g.*, the Milk Industry Assistance Grant payable under Section 6 of the Milk Act, 1934.

There are paid out of the Milk Fund—

(*a*) the equalisation payment, that is to say a payment in respect of milk produced in Northern Ireland and delivered to a creamery and used for the purpose of the extraction of cream for sale as such or for manufacture into butter. The amount of the equalisation payment, which has been payable in respect of milk delivered to creameries as from 1st April, 1934, is such as is required to raise the average price paid by all creameries for such milk to 5d. per gallon during the summer months, and 6d. per gallon during the winter months, or during any period after the 31st March, 1936, such sum as may be prescribed, not being greater than is required to raise the average price of milk to the prices afore-mentioned ;
(*b*) A bonus not exceeding 2d. per gallon in respect of milk of Grade A and Grade B, and 1d. per gallon in respect of milk of Grade C delivered to a creamery by the holder of a producer's licence and used for the purpose of the extraction of cream for sale as such or for manufacture into butter. The rates of bonus prescribed by the Ministry were the maximum rates which could be fixed under the Act, namely, 2d. per gallon for milk of Grade A and Grade B, and 1d. per gallon for milk of Grade C ;
(*c*) Expenses of the Ministry of Agriculture and the Joint Milk Council in carrying the Act into effect ; and
(*d*) Contributions towards any schemes which may be approved by the Ministry of Agriculture for the eradication of disease among dairy cattle, the encouragement of milk consumption o the supply of milk to school children at a cheap rate.

Section 12 of the Act provides that creameries may be required to make payments into the Milk Fund in the event of the average price of milk paid by them exceeding

6d. per gallon in summer and 7d. per gallon in winter during the period beginning on the 1st April, 1936.

REGULATIONS, &c. MADE UNDER THE ACT.

The Milk (Grade A) Regulations (Northern Ireland), 1934 (S.R. & O. of Northern Ireland, 1934, No. 69).

The Milk (Grade B) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireland, 1934, No. 70).

The Milk (Grade C) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireland, 1934, No. 71).

These Regulations prescribe the standards for milk of Grade A, Grade B and Grade C, respectively, and also the conditions which are to be complied with by the holders of producers' and distributors' licences for milk of these grades. The Regulations provide *inter alia* that milk of Grades A and B may not be sold to the public except in bottles and that the bottles and caps shall comply with the requirements of the Regulations, *e.g.* in regard to colour, inscriptions, etc. Provision is made in the Regulations that milk of Grade A and Grade B must be cooled and that producers of these grades of milk must possess suitable sterilizing equipment.

The Butter and Margarine (Sales) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireand, 1934, No. 82).

The Butter and Margarine (Sales) (Amendment) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireland, 1934, No. 121).

These Regulations prescribe the conditions with which the holders of licences for the sale of butter and margarine are required to comply.

The Joint Milk Council (First Election of Members) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireland, 1934, No. 80).

The Joint Milk Council (First Election of Members) (No. 2) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireland, 1934, No. 86).

The Joint Milk Council (First Election of Members) (No. 2) (Amendment) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireland, 1934, No. 88).

These Regulations prescribe the manner of the holding of the first election of members of the Joint Milk Council by the holders of producers' and distributors' licences.

The Milk (Equalisation Payment) Regulations (Northern Ireland), 1934 (S. R. & O. o Northern Ireland, 1934, No. 62).

The Milk (Equalisation Payment) (Amendment) Regulations (Northern Ireland), 1934 (S. R. & O. of Northern Ireland, 1934, No. 123).

These Regulations prescribe the manner of payment of equalisation payment and the conditions, subject to which payment may be made.

Statement showing the total Gallonage and the total amount of Equalisation Payment for the period April 1 to September 30, 1934.

Month.	Number of gallons.	Average Price per gallon.	Equalisation Payment per gallon.	Amount.
				£ s. d.
April	755,498	3.7	1.3	4,092 5 5
May	1,406,267	3.3	1.7	9,961 1 6
June	2,537,725	3.0	2.0	21,147 14 1
July	2,714,582	2.8	2.2	24,883 13 4
August	2,648,925	2.9	2.1	24,178 1 4
September ..	2,088,306	2.92	2.08	18,098 13 2
Total ..	12,151,303			101,361 8 10

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LIST OF MINISTRY'S LEAFLETS AND OTHER PUBLICATIONS.

No. 1. Flax Seed.
" 2. Improvement of Farm Poultry.
" 3. Feeding for Egg Production.
" 4. The Marketing of Eggs.
" 5. The Dishorning of Calves.
" 6. The Packing of Apples in Standard Boxes.
" 7. Potato Trials.
" 8. Seed Testing for Farmers.
" 9. The Renovation of Orchards.
" 10. Fruit Tree Pests—Capsid Bugs.
" 11. Fruit Tree Pests—Aphides and Apple Sucker.
" 12. Fruit Tree Pests—Caterpillars.
" 13. Contagious Abortion in Cattle.
" 14. Cheese-making on the Farm.
" 15. Suitable Varieties of Fruit.
" 16. The Feeding of Dairy Cows.
" 17. Home Bottling of Fruits and Vegetables.
" 18. Marketing of Dead Poultry.
" 19. How to Feed Linseed.
" 20. The Hatching and Rearing of Chickens.
" 21. The Uses and Advantages of Portable Poultry Houses.
" 22. Leather-Jacket Grubs.
" 23. The Handling and Care of Wool.
" 24. Fluke in Sheep.
" 25. The Rearing and Management of Young Horses.
" 26. Ordnance Survey Maps for Farmers.
" 27. How to Keep Eggs Clean.
" 28. The Construction of a Laying House for Poultry.
" 29. The Selection and Breeding of Laying Hens.
" 31. Coccidiosis in Poultry.
" 32. Roup of Poultry (Fowl Pox).
" 33. Spraying Calendar for Apple Orchards.
" 34. The Pruning of Apple Trees.
" 35. The Fattening of Pigs.
" 36. Advantages of Milk Recording.
" 37. The Raising and Fattening of Turkeys.
" 38. The Destruction of Charlock.
" 39. The Production of Clean Milk.
" 40. The Laying Down and Management of Temporary Pastures.
" 41. Blackleg, Blackquarter, or Quarterill.
" 42. The Purchase of Balanced Rations for Dairy Cows.
" 43. Tuberculosis in Poultry.
" 44. Results of Crop Experiments.
" 45. The Breeding and Rearing of Pigs.
" 46. Hints for Winter Egg Production.
" 47. The Care and Management of Sheep.
" 48. —
" 49. American Gooseberry Mildew.
" 50. Potato Blight.
" 51. Butter-making on the Farm.
" 52. Gapes in Chickens.
" 54. Breeding and Rearing of Calves.
" 55. Destruction of Ragwort or Benweed.
" 56. Identification of Egg Supplies.
" 57. How to have Eggs of First Quality.
" 58. Fertilisers and Feeding Stuffs.
" 59. Bacillary White Diarrhoea (Pullorum Disease.)
" 60. Winter Agricultural Classes.

No. 61. The Care and Management of Breeding Bulls.
,, 62. The Production of Timber on the Farm.
,, 63. Sheep-Castration, Docking, Foot-rot and Care of Feet.
,, 64. The Destruction of Warble Fly Maggots in Cattle.
,, 65. The Packing of Apples in Barrels.
,, 66. Seed Testing Facilities for Traders.
,, 67. The Cultivation of Vegetables.
,, 68. The Cultivation of Strawberries.
,, 69. The Construction of Piggeries.
,, 70. Ringworm.
,, 71. The Cultivation of Raspberries.
,, 72. Tree Planting for Shelter and Ornament.
,, 73. The Propagation and Maintenance of Healthy Stocks of Potatoes.
,, 74. New Pure Strains of Flax.
,, 75. Pig Production and the Pigs Marketing Scheme.
,, 76. Acarine (Isle of Wight) Disease of Bees.
,, 77. Licensing of Milk Producers and Distributors.
,, 78. Graded Milk.
,, 79. The Picking and Storing of Apples.
,, 80. Hoose or Husk in Farm Stock.
,, 81. The Construction of Cow Houses.
,, 82. White Scour in Calves.
,, 83. The Care, Management and Feeding of the Poultry Breeding Stock.

CIRCULARS.

No. 1. Phosphatic Fertilisers.
,, 2. Fertilisers and Feeding-Stuffs Act, 1926—Decorticated Cotton Cake.
,, 5. Why Pay a Tax on the Horns of Cattle ?
,, 8. Basic Slag
,, 9. Smut in Oats.
,, 10. Purchase of Fertilisers and Feeding Stuffs.
,, 11. Fertilisers and Feeding Stuffs Act—General Summary.
,, 12. The Treatment of Liver Fluke.
,, 13. The Ox Warble Fly.

MISCELLANEOUS PUBLICATIONS.

Store Cattle.
Reports on Egg-Laying Tests.
Crop Insurance.
List of Growers of certified crops of Immune Varieties of Potatoes.
List of Growers of certified crops of Non-Immune Varieties of Potatoes.
The Ministry's Monthly Report.
Register of Premium Stallions.
Guide to Live Stock Breeding Act (Northern Ireland), 1922.
Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

TALKS TO PRODUCERS.

No. 1. Standardise, Organise, Advertise.
,, 2. Winter Eggs from Pullets.
,, 3. Feeding Layers for Profit.
,, 4. Cull the Loafers.
,, 5. Good Housing Means More Eggs in Winter.
,, 6. The Ten Commandments of High Egg Production in Winter.
,, 9. A Few of the Things the Purchaser Wants.
,, 10. Use the Dairy By-Products Efficiently.
,, 11. Make the Farm Self-Contained.
,, 12. The Secrets of Winter Egg Production.
,, 14. Money from Early Spring Chickens.
,, 15. Produce First Quality Eggs.
,, 16. Table Ducklings are Money Makers.
,, 19. Hornless Store Cattle Bring the Best Prices.
,, 20. Grow More Oats and Feed More Stock.
,, 21. Pure-Bred Sires Produce Superior Progeny.
,, 22. More Money from Apples.
,, 23. The Farm Poultry Flock as a Money Maker.
,, 24. Good Cockerels are Cheap.

No. 25. Reduce Calf-Rearing Costs.
„ 28. The Ten Commandments of Profitable Apple Production.
„ 29. Marketing of Honey.
„ 30. Good Sized Pullets Lay Good Sized Eggs.
„ 31. The Superfluous Cockerel is an Expensive Luxury.
„ 32. How to Obtain Large Apples.
„ 33. The Remedy for a Cattle Industry Menace.
„ 34. The Grass Seed Industry.
„ 37. Spraying Hints for Fruit Growers.
„ 38. A Coop for Broody Hens and for Fattening Cockerels.

TALKS TO CONSUMERS.

No. 1. Let's have Eggs and Good Health.
„ 2. Eat More Eggs and Poultry.
„ 3. Cream for your Porridge and Butter for your Bread.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 15 Donegall Square West, Belfast, at the prices stated :—

(1) The Annual Report of the Ministry of Agriculture for Northern Ireland. 2/6 net.
(2) Annual Report upon the Agricultural Statistics of Northern Ireland. 2/– net.
(3) The Journal of the Ministry of Agriculture for Northern Ireland. 2/6 net.
(4) The Agricultural Output of Northern Ireland, 1925. 2/6 net.
(5) The Marketing of Northern Ireland Agricultural Produce. 2/– net.

Table giving details of the duties carried out by the Itinerant Instructors in Agriculture in each of the six counties.

County.	Instructors employed.	Year.	No. of visits to farms.	No. of lectures delivered.	Attendances at lectures.	No. of field experiments carried out.	No. of demonstrations laid down.
Antrim ..	2	1931-32	736	22	1,005	40	163
		1932-33	900	25	1,846	37	200
		1933-34	898	23	1,405	33	185
Armagh ..	1	1931-32	770	9	498	11	93
		1932-33	700	8	318	13	69
		1933-34	857	8	258	16	74
Down ..	2	1931-32	887	17	913	37	168
		1932-33	1,000	15	850	37	110
		1933-34	986	14	656	34	184
Fermanagh .	1	1931-32	759	15	491	13	90
		1932-33	714	6	150	9	86
		1933-34	545	10	314	8	124
Londonderry	1	1931-32	912	9	376	17	69
		1932-33	788	10	508	15	20
		1933-34	737	11	513	13	34
Tyrone ..	3	1931-32	1,782	16	925	32	163
		1932-33	1,750	13	488	38	94
		1933-34	1,797	21	903	35	127
Total ..	10	1931-32	5,846	88	4,208	150	746
		1932-33	5,852	77	4,160	149	579
		1933-34	5,820	87	4,049	139	728

Table showing the number of farms visited and the number of field and live stock demonstrations carried out by the Agricultural Overseers in each of the six counties.

County.	Overseers employed.	Year.	No. of visits to farms.	No. of Demonstrations carried out.
Antrim	2	1931-32	2,537	173
		1932-33	2,500	161
		1933-34	2,559	209
Armagh	2	1931-32	2,209	153
		1932-33	2,264	197
		1933-34	2,229	156
Down	2	1931-32	1,107	143
		1932-33	2,000	197
		1933-34	1,476	198
Fermanagh	3	1931-32	2,863	260
		1932-33	2,684	269
		1933-34	2,560	355
Londonderry ..	3	1931-32	3,814	251
		1932-33	3,000	243
		1933-34	3,750	316
Tyrone	4	1931-32	3,862	291
		1932-33	3,815	335
		1933-34	3,280	271
Total	16	1931-32	16,392	1,271
		1932-33	16,263	1,402
		1933-34	15,854	1,505

Table illustrating the work performed by the Itinerant Instructors in Poultry-Keeping and Butter-Making.

County.	No. of Instructors.	Year.	No. of lectures	No. of visits.	No. of courses of instruction given.	No. of daily classes in these courses.	No. of pupils on class attendance register.
Antrim ..	2	1931-32	22	1,541	1	15	18
		1932-33	17	1,475	2	29	32
		1933-34	23	1,318	3	43	52
Armagh ..	1	1931-32	5	567	1	18	9
		1932-33	2	855	3	48	44
		1933-34	5	883	4	52	45
Down ..	2	1931-32	7	1,190	5	75	50
		1932-33	9	1,310	4	65	48
		1933-34	6	1,340	4	61	58
Fermanagh .	1	1931-32	6	990	1	13	20
		1932-33	–	885	2	25	37
		1933-34	3	872	1	13	21
Londonderry	2	1931-32	16	1,783	5	62	84
		1932-33	21	1,579	5	74	87
		1933-34	20	1,652	6	91	95
Tyrone ..	2	1931-32	13	1,318	6	90	116
		1932-33	4	1,181	3	45	61
		1933-34	7	1,213	6	89	105
Total ..	10	1931-32	69	7,389	19	273	297
		1932-33	53	7,285	19	286	309
		1933-34	64	7,278	24	349	376

Note.—The Butter-making scheme does not operate in Counties Fermanagh and Tyrone.

In the case of all counties except Counties Fermanagh and Tyrone, figures in column 5 include visits to private dairies.

Table showing the main conditions governing the award of premiums to holders of Poultry Stations during the seasons 1931-32, 1932-33, 1933-34.

Type of Station.	Maximum Premium Payable.	Number of sittings to be distributed.	Number of eggs per sitting.	Average price per sitting.
	£			s. d.
Hen or Hen and Duck ..	7	70	12	2 6
Goose	2	12	3	3 0
Turkey ..	3	20 hens to be served at a fee not exceeding 1/- per service.		

Table showing the number of Egg Distribution Stations, the number of sittings of eggs distributed, the number of Turkey Stations, and the number of turkey hens mated in each county.

County.	Year.	No. of Egg Distribution Stations.		No. of Sittings of Eggs distributed (12 eggs per sitting)	No. of Egg Distribution Stations (Goose)	No. of Sittings of eggs distributed (3 eggs per sitting)	No. of Turkey Stations	No. of turkey hens mated
		Hens only	Hens and Ducks					
Antrim ..	1931-32	47	15	12,444	16	260	76	2,754
	1932-33	56	16	14,051	19	295	85	3,011
	1933-34	51	17	16,460	16	247	80	2,699
Armagh ..	1931-32	28	5	3,513	16	249	50	2,039
	1932-33	26	9	4,623	18	269	55	2,249
	1933-34	26	6	4,487	16	253	52	2,028
Down	1931-32	56	5	11,978	11	162	80	2,560
	1932-33	64	4	13,685	15	219	92	2,556
	1933-34	64	5	15,132	14	372	86	2,506
Fermanagh ..	1931-32	22	23	4,956	20	296	58	2,893
	1932-33	24	23	4,862	20	293	64	3,193
	1933-34	24	21	5,398	19	271	63	2,921
Londonderry .	1931-32	45	13	8,219	23	357	64	2,542
	1932-33	47	16	8,934	23	362	69	2,748
	1933-34	44	13	9,278	20	270	56	2,082
Tyrone	1931-32	56	13	8,765	27	420	97	4,431
	1932-33	56	11	8,708	27	412	103	4,679
	1933-34	52	10	10,211	25	391	100	4,027
Totals ..	1931-32	254	74	49,875	113	1,744	425	17,219
	1932-33	273	79	54,863	122	1,850	468	18,436
	1933-34	261	72	60,966	110	1,804	437	16,263
Totals for 1930-31 .		242	99	43,669	120	1,767	425	16,290

Table showing the number of Poultry Stations at which trapnesting was carried our during the winter months of the years 1931-32, 1932-34 and 1933-34, together with the corresponding figures for the two previous years:—

County.	1929-30	1930-31	1931-32	1932-33	1933-34
Antrim	13	14	11	10	11
Armagh	5	4	5	5	5
Down	12	11	14	14	10
Fermanagh	2	2	1	4	4
Londonderry	10	13	13	14	12
Tyrone	9	8	9	10	11
Totals	51	52	53	57	53

Table showing the number of Poultry (Hen and Duck) Stations by Breeds and the number of sittings of eggs distributed during the seasons, 1931-32, 1932-33, 1933-34.

Breed.	Year.	ANTRIM.		ARMAGH.		DOWN.		FERMANAGH.		LONDONDERRY.		TYRONE.	
		No. of Stations.	No. of Sittings.	No. of Stations.	No. of Sittings.	No. of Stations.	No. of Sittings.	No. of Stations.	No. of Sittings.	No. of Stations.	No. of Sittings.	No. of Stations.	No. of Sittings.
HENS.													
White Wyandotte	1931-32	22	4,009	11	960	23	4,464	16	1,531	14	1,620	26	2,885
	1932-33	28	5,049	11	1,301	26	4,790	16	1,475	14	1,866	23	2,561
	1933-34	24	4,689	10	1,126	26	5,202	15	1,767	13	2,012	23	3,411
White Leghorn	1931-32	18	4,224	7	710	9	1,749	14	1,275	13	1,523	6	862
	1932-33	17	4,089	7	1,185	9	1,916	14	1,320	17	1,995	9	1,159
	1933-34	17	5,278	7	1,195	9	1,918	13	1,293	13	1,813	9	1,621
Barred Plymouth Rock	1931-32	2	157	–	–	–	–	1	81	–	–	2	117
	1932-33	2	175	–	–	–	–	1	78	–	–	1	88
	1933-34	2	233	–	–	–	–	–	–	–	–	1	113
Light Sussex	1931-32	–	–	4	402	4	569	4	686	5	595	5	426
	1932-33	–	–	4	391	4	577	5	529	4	395	5	389
	1933-34	–	–	4	428	5	782	6	631	3	369	4	464
Rhode Island Red	1931-32	20	3,895	11	1,250	25	5,196	10	1,117	26	4,275	30	4,539
	1932-33	25	4,563	13	1,746	29	6,311	11	1,216	28	4,468	29	4,310
	1933-34	25	6,016	11	1,740	29	7,126	11	1,470	28	4,915	26	4,436
DUCKS.													
Indian Runner	1931-32	–	–	–	–	1	9	13	116	–	–	3	7
	1932-33	–	–	–	–	–	–	13	96	–	–	3	–
	1933-34	–	–	–	–	1	17	12	99	–	–	–	–
Khaki Campbell	1931-32	5	50	1	24	3	24	5	74	4	20	3	–
	1932-33	4	4	1	14	3	54	5	80	6	55	4	26
	1933-34	6	98	1	12	2	44	6	87	5	34	5	50
Aylesbury	1931-32	6	92	4	140	1	64	4	66	6	161	3	61
	1932-33	8	133	5	138	1	35	5	66	7	117	2	99
	1933-34	8	111	3	85	2	92	3	50	5	101	1	25
Fawn and White Runner	1931-32	4	17	1	25	–	–	–	–	3	26	4	48
	1932-33	4	35	2	42	–	–	–	–	3	38	2	74
	1933-34	3	34	–	–	–	–	–	–	3	34	4	90
Totals	1931-32	–	12,444	–	3,511	–	12,075	–	4,946	–	8,220	–	8,945
	1932-33		14,048		4,817		13,683		4,860		8,934		8,706
	1933-34		16,459		4,586		15,181		5,397		9.278		10,210
Totals for 1930-31		–	11,283	–	3,753	–	11,464	–	4,174	–	6,258	–	7,328

Table showing the amount expended by County Committees of Agriculture on premiums for holders of Poultry Stations under the Scheme for the Improvement of Poultry:—

County.	Year.	Hen or Hen and Duck Stations.	Goose Stations.	Turkey Stations.
		£ s. d.	£ s. d.	£ s. d.
Antrim	1931-32	461 2 0	30 0 0	205 14 0
	1932-33	519 3 0	35 17 9	227 16 9
	1933-34	501 8 0	23 19 2	195 7 6
Armagh	1931-32	244 6 0	32 0 0	112 15 0
	1932-33	241 19 6	36 0 0	151 5 0
	1933-34	216 10 6	34 0 0	126 0 0
Down	1931-32	419 4 0	21 13 4	218 18 0
	1932-33	500 18 0	23 6 8	229 1 6
	1933-34	510 9 0	28 0 0	216 12 6
Fermanagh	1931-32	312 17 0	39 16 8	158 2 6
	1932-33	339 4 0	40 0 0	176 0 0
	1933-34	300 4 2	38 0 0	157 10 0
Londonderry	1931-32	380 3 1	46 0 0	176 0 0
	1932-33	414 11 3	46 0 0	189 15 0
	1933-34	339 9 10	36 2 3	140 0 0
Tyrone	1931-32	513 10 8	51 6 8	262 12 6
	1932-33	449 17 0	52 6 9	280 10 0
	1933-34	464 8 0	47 13 4	248 2 6

Table giving particulars of the work performed in connection with the Scheme of Instruction in Horticulture and Bee-keeping.

County.	Number of Instructors employed.	Year.	Number of visits and demonstrations.	Number of lectures delivered	Number of demonstration plots laid down.	Number of vegetable plots laid down.
Antrim ..	2	1931-32	1,980	25	49	25
		1932-33	1,899	22	56	18
		1933-34	1,941	24	11	25
Armagh ..	2	1931-32	1,090	17	42	52
		1932-33	762*	16	56	20
		1933-34	1,726	18	12	35
Down ..	2	1931-32	1,547	10	9	50
		1932-33	1,511	24	7	46
		1933-34	1,467	16	17	81
Fermanagh .	1	1931-32	875	14	3	10
		1932-33	955	15	6	12
		1933-34	894	12	14	16
Londonderry	1	1931-32	818	14	41	6
		1932-33	939	13	38	6
		1933-34	835	12	38	6
Tyrone ..	1	1931-32	1,032	30	34	24
		1932-33	975	30	43	27
		1933-34	1,022	26	49	28
Totals ..	9	1931-32	7,342	110	178	167
		1932-33	7,041	120	206	129
		1933-34	7,885	108	141	191

*One of the Instructors in Horticulture was absent from duty on sick leave during the whole of the 1932-33 report period.

Table showing the number of holdings entered for the "Cottage and Garden" Prize Competition in rural districts, together with the number and total value of the prizes awarded.

County.	Year.	Number of entries.			Number of prizes awarded in each class.			Total amount expended in prizes.
		Class I Cottages.	Class II Ex-service men.	Class III Championship.	Class I	Class II	Class III	£ s. d.
Antrim	1931-32	111	20	14	42	14	14	70 0 0
	1932-33	113	19	13	28	13	5	66 10 0
	1933-34	112	16	18	42	14	14	70 0 0
Fermanagh ..	1931-32	15	7	6	8	4	4	34 0 0
	1932-33	9	6	6	8	4	4	34 0 0
	1933-34	10	7	5	6	4	4	27 2 6
Down* 1934 ..	1933-34	73	—	—	24	—	—	35 0 0

*County Down Committee of Agriculture in 1934 revived this competition, which had lapsed for a number of years.

Table giving particulars of the grants made by each County Committee of Agriculture for the purpose of assisting the promotion of Agricultural Shows, Ploughing Matches, etc.

County.	Year.	Amount Allocated.	Number and value of grants estimated to be paid in respect of :—			
			Agricultural Shows, Rams' Shows, etc.		Skilled labour competitions (ploughing matches, orchard competitions, etc.)	
			No.	Value.	No.	Value.
		£ s. d.		£ s. d.		£ s. d.
Antrim	1931-32	415 0 0	10	397 5 0	2	10 0 0
	1932-33	365 0 0	13	355 0 0	2	10 0 0
	1933-34	350 0 0	10	325 0 0	3	25 0 0
Armagh	1931-32	125 0 0	1	75 0 0	6	50 0 0
	1932-33	105 0 0	1	75 0 0	4	20 0 0
	1933-34	150 0 0	1	100 0 0	6	50 0 0
Down	1931-32	425 0 0	10	384 0 0	3	30 0 0
	1932-33	450 0 0	8	289 0 0	3	25 0 0
	1933-34	350 0 0	7	136 10 0	3	25 0 0
Fermanagh	1931-32	81 0 0	2	70 0 0	2	10 13 0
	1932-33	71 0 0	2	60 0 0	2	10 13 0
	1933-34	76 0 0	2	60 0 0	2	10 13 0
Londonderry ..	1931-32	110 0 0	5	90 0 0	3	19 0 0
	1932-33	95 0 0	4	75 0 0	2	10 0 0
	1933-34	120 0 0	6	113 0 0	3	15 0 0
Tyrone	1931-32	193 0 0	6	178 0 0	3	15 0 0
	1932-33	193 0 0	5	150 0 0	4	43 0 0
	1933-34	160 0 0	6	145 0 0	3	15 0 0
Totals	1931-32	1,349 0 0	34	1,194 5 0	19	134 13 0
	1932-33	1,279 0 0	33	1,004 0 0	17	118 13 0
	1933-34	1,206 0 0	32	879 10 0	20	140 13 0

Table showing amounts allocated for and expended on premiums to Stallions by the several County Committees of Agriculture for the years 1932, 1933 and 1934.

County	1932.		1933.		1934.	
	Amount allocated	Amount expended	Amount allocated	Amount expended	Amount allocated	Amount expended
	£	£	£	£	£	£
Antrim ..	395	387	395	380	345	345
Armagh ..	230	175	230	175	175	175
Down	560	545	545	545	545	545
Fermanagh .	155	143	155	155	155	155
Londonderry	260	247	260	248	220	220
Tyrone ..	280	280	280	278	270	270
Totals ..	1,880	1,777	1,865	1,781	1,710	1,710

Table showing the values of premiums for Stallions adopted by each County Committee of Agriculture for the years 1932, 1933 and 1934 :—

County.	1932.			1933.			1934.		
	Thoroughbred.	Clydesdale.	Irish Draught and Half-bred.	Thoroughbred.	Clydesdale.	Irish Draught and Half-bred.	Thoroughbred.	Clydesdale.	Irish Draught and Half-bred.
	£	£	£	£	£	£	£	£	£
Antrim	50	35	35	50	35	35	45	30	30
Armagh	55	40	—	55	40	—	55	40	—
Down	50	35	35	50	35	35	50	35	35
Fermanagh ..	50	35	35	50	35	35	50	35	35
Londonderry ..	50	40	—	50	40	—	40	35	—
Tyrone	50	30	30	50	30	30	45	30	30

Table showing the number of mares served by each class of premium stallion in 1932, 1933 and 1934.

County.	1932.			1933.			1934.		
	Mares served by :—			Mares served by :—			Mares served by :—		
	Thoroughbred Stallions.	Clydesdale Stallions.	Irish Draught and Half-bred Stallions.	Thoroughbred Stallions.	Clydesdale Stallions.	Irish Draught and Half-bred Stallions.	Thoroughbred Stallions.	Clydesdale Stallions.	Irish Draught and Half-bred Stallions.
Antrim	128	453	94	106	578	95	122	748	81
Armagh	30	162	—	36	219	—	35	268	—
Down	246	272	116	234	402	50	312	455	87
Fermanagh ..	23	111	39	40	157	37	41	150	37
Londonderry ..	68	488	—	78	465	—	87	434	—
Tyrone	71	357	36	72	400	36	87	375	50
Totals	566	1,843	285	566	2,221	218	684	2,430	255

Table showing the distribution of premiums to stallions in the various counties for the years 1932, 1933 and 1934.

County.	1932.				1933.				1934.			
	Thoroughbred.	Clydesdale.	Irish Draught and Half-bred.	Total.	Thoroughbred.	Clydesdale.	Irish Draught and Half-bred.	Total.	Thoroughbred.	Clydesdale.	Irish Draught and Half-bred.	Total.
Antrim	3	6	1	10	3	6	1	10	3	7*	1	11
Armagh	1	3	–	4	1	3	–	4	1	3	–	4
Down	7	4	2	13	6	6	1	13	6	6	1	13
Fermanagh	1	2	1	4	1	2	1	4	1	2	1	4
Londonderry	2	7†	–	9	2	7†	–	9	2	7†	–	9
Tyrone	2	5	1	8	2	5	1	8	2	5	1	8
Totals	16	27	5	48	15	29	4	48	15	30	4	49

NOTE. †6 partial premiums in County Londonderry.

*2 partial premiums in County Antrim.

Table showing the regulations made by the several County Committees in regard to service fees for cows, etc., during the years 1932, 1933 and 1934.

County.	Service fees per cow.	Services.		Valuation of holding cow owners.
		Yearling bulls.	Older bulls.	
		Minimum No.	Minimum No.	
Antrim	2/6 in all cases	30	40	Not limited
Armagh	2/6 to 5/-	30	40	do.
Down	2/6 in all cases	30	40	do.
Fermanagh	2/6 in all cases	30	40	do.
Londonderry	2/6 in all cases	30	40	do.
Tyrone	2/6 in all cases	30	40	do.

Table showing the amounts allocated by County Committees for premiums to bulls in 1932 and the actual expenditure in each county.

County.	Amount allocated.				Actual expenditure.
	From joint fund.	Dairy bulls for M.R.A.'s (joint fund).	From agricultural development vote.	Total.	
	£	£	£	£	£
Antrim	1,200	140	304	1,644	1,528
Armagh	570	60	112	742	686
Down	1,200	120	416	1,736	1,673
Fermanagh	500	80	352	932	*971
Londonderry	554	60	256	870	*877
Tyrone	950	100	320	1,370	1,344
Totals	4,974	560	1,760	7,294	†7,079

*Excess expenditure over allocation was met from savings effected in other live stock sections.

†In addition, an expenditure of £432 was incurred in paying premiums for 79 third-year " special term " bulls, as in accordance with the provisions of the scheme the premiums in such cases are not met by instalments from the bull-owners.

Table showing the amounts allocated by County Committees for premiums to bulls in 1933 and the actual expenditure in each county.

County.	Amount allocated.				Actual expenditure.
	From joint fund.	Dairy bulls for M.R.A.'s (joint fund).	From agricultural development vote.	Total.	
	£	£	£	£	£
Antrim	1,175	140	328	1,643	1,466
Armagh	580	60	192	832	679
Down	1,200	120	480	1,800	1,679
Fermanagh	500	80	434	1,014	971
Londonderry	550	60	344	954	928
Tyrone	950	100	432	1,482	1,399
Totals	4,955	560	2,210	7,725	†7,122

†In addition, an expenditure of £233 was incurred in paying premiums for 46 third-year " special term " bulls, as in accordance with the provisions of the Scheme the premiums in such cases are not met by instalments from the bull-owners.

Table showing the amounts allocated by County Committees for premiums to bulls in 1934, and the actual expenditure in each county.

County.	Amount allocated.				Actual expenditure.
	From joint fund.	Dairy bulls for M.R.A.'s (joint fund).	From agricultural development vote.	Total.	
	£	£	£	£	£
Antrim	1,000	140	256	1,396	1,355
Armagh	580	60	75	715	687
Down	1,200	120	424	1,744	1,665
Fermanagh	500	80	354	934	916
Londonderry	520	60	298	878	875
Tyrone	915	100	376	1,391	1,347
Totals	4,715	560	1,783	7,058	† 6,845

†In addition, an expenditure of £523 was incurred in paying premiums for 110 third-year " special term " bulls, as in accordance with the provisions of the Scheme the premiums in such cases are not met by instalments from the bull-owners.

Table giving particulars of the bulls selected for and awarded ordinary premiums under the Cattle-breeding Scheme in 1932.

County.	Pure-bred registered dairy Shorthorn.		Pure-bred Shorthorn.	Registered dairy non-pedigree Shorthorn.	Aberdeen Angus.	Galloway.	Hereford.	Totals.
	Dam and sire registered.	Dam only registered.						
Antrim	20	11	30	10	5	23	—	99
Armagh	10	4	26	1	1	—	—	42
Down	21	7	40	3	33	—	—	104
Fermanagh ..	16	5	12	2	23	—	1	59
Londonderry ..	19	5	18	4	6	—	—	52
Tyrone	23	11	25	3	19	—	—	81
Totals	109	43	151	23	87	23	1	437

Table giving particulars of the bulls selected for and awarded ordinary premiums under the Cattle-breeding Scheme in 1933.

County.	Pure-bred registered dairy Shorthorn.		Pure-bred Shorthorn.	Registered dairy non-pedigree Shorthorn.	Aberdeen Angus.	Galloway.	Hereford.	Totals.
	Dam and sire registered.	Dam only registered.						
Antrim	25	8	30	4	5	24	—	96
Armagh	10	5	23	3	2	—	—	43
Down	22	12	42	2	28	—	—	106
Fermanagh ..	18	6	9	2	23	—	1	59
Londonderry ..	18	6	24	2	7	—	—	57
Tyrone	23	13	25	4	22	—	—	87
Totals	116	50	153	17	87	24	1	448

Table giving particulars of the bulls selected for and awarded ordinary premiums under the Cattle-breeding Scheme in 1934.

County.	Pure-bred registered dairy Shorthorn.		Pure-bred Shorthorn.	Registered dairy non-pedigree Shorthorn.	Aberdeen Angus.	Galloway.	Hereford.	Totals.
	Dam and sire registered.	Dam only registered.						
Antrim	27	9	22	2	4	23	—	87
Armagh	11	7	22	2	2	—	—	44
Down	26	17	34	3	25	—	—	105
Fermanagh ..	16	6	10	2	22	—	1	57
Londonderry ..	18	7	23	1	5	—	—	54
Tyrone	26	15	22	2	19	—	—	84
Totals	124	61	133	12	77	23	1	431

Table giving particulars of the distribution of "Special Term" bulls placed out in 1932.

County.	Registered dairy Shorthorn.	Shorthorn.	Non-pedigree dairy Shorthorn.	Aberdeen Angus.	Galloway (for Glens district in Co. Antrim.)	Totals.
Antrim ..	6	3	4	1	7	21
Armagh ..	2	5	5	5	–	17
Down	1	8	3	7	–	19
Fermanagh ..	–	11	4	13	–	28
Londonderry	5	1	2	10	–	18
Tyrone	2	6	3	10	–	21
Totals ..	16	34	21	46	7	124

Table giving particulars of the distribution of "Special Term" bulls placed out in 1933.

County.	Registered dairy Shorthorn.	Shorthorn.	Non-pedigree dairy Shorthorn.	Aberdeen Angus.	Galloway (for Glens district in Co. Antrim.)	Totals.
Antrim ..	10	–	2	2	7	21
Armagh ..	4	8	3	1	–	16
Down	5	6	3	4	–	18
Fermanagh ..	3	10	2	11	–	26
Londonderry	2	4	5	8	–	19
Tyrone	3	4	4	11	–	22
Totals ..	27	32	19	37	7	122

Table giving particulars of the distribution of "Special Term" bulls placed out in 1934.

County.	Registered dairy Shorthorn.	Shorthorn.	Non-pedigree dairy Shorthorn.	Aberdeen Angus.	Galloway (for Glens district in Co. Antrim.)	Totals.
Antrim ..	3	1	1	3	9	17
Armagh ..	3	4	3	2	–	12
Down	1	8	1	5	–	15
Fermanagh ..	2	2	3	14	–	21
Londonderry	3	6	–	10	–	19
Tyrone	7	1	4	8	–	20
Totals ..	19	22	12	42	9	104

Table showing the total numbers of bulls standing for service in Northern Ireland, under the Cattle-breeding Schemes in the years 1932, 1933 and 1934.

	Year 1932.	Year 1933.	Year 1934.
Ordinary premium bulls	437	448	431
"Special Term" bulls	244	281	318
Subsidised bulls	12	12	15
Totals	693	741	764

Table showing the minimum qualifying standards for registration of dairy cows—ordinary and advanced.

Breed.	Ordinary Register.			Advanced Register.		
	Milk (lb.)	Butter-fat (lb.)	Percentage of Butter-fat.	Milk (lb.)	Butter-fat (lb.)	Percentage of Butter-fat.
Shorthorn	6,000	210	3	8,000	280	3
British Friesian ..	8,000	280	3	10,000	350	3
Kerry	5,000	175	3	7,000	245	3
Jersey	5,000	225	4	7,000	315	4
Any other pure breed or non-pedigree	Same as for Shorthorn.			Same as for Shorthorn.		

Table illustrating the minimum registration yields required in the case of cows which failed to produce a calf within the 14 months period, but calved within 16 months from the previous date of calving, and the deductions which are made when entering particulars in the Register.

Breed.	Minimum yield to qualify for registration.		Deductions to be made from actual yield for entry in the Register where a calf has not been produced in 14 months but has within 16 months.	
	Milk (lb.)	Butter-fat (lb.)	Milk (lb.)	Butter-fat (lb.)
Shorthorn ..	10,000	350	2,000	Corresponding reduction based on the original calculated average percentage of butter-fat.
British Friesian ..	12,500	437.5	2,500	
Kerry	8,750	306.25	1,750	
Jersey	8,750	393.75	1,750	
Any other pure breed or non-pedigree Shorthorn	Same as for Shorthorn.			

Table showing yields of pure-bred and non-pedigree cows registered by the Ministry from the 1st October, 1931, to 30th September, 1932.

Breed.	Number of cows registered on a yield of :—				Total No. of cows registered.
	Gallons 500-600	Gallons 600-800	Gallons 800-1,000	Gallons over 1,000	
Pure-bred Shorthorn ..	—	75	20	1	96
British Friesian	—	—	—	1	1
Ayrshire	—	3	1	—	4
Kerry	1	2	—	—	3
Jersey	—	2	—	—	2
Non-pedigree Shorthorn	—	619	286	118	1,023
Totals	1	701	307	120	1,129

Table showing yields of pure-bred and non-pedigree cows registered by the Ministry from the 1st October, 1932, to 30th September, 1933.

Breed.	Number of cows registered on a yield of :—				Total No. of cows registered.
	Gallons 500-600	Gallons 600-800	Gallons 800-1,000	Gallons over 1,000	
Pure-bred Shorthorn ..	—	68	16	2	86
British Friesian	—	—	—	—	—
Ayrshire	—	3	—	—	3
Kerry	4	4	—	1	9
Jersey	1	1	—	—	2
Non-pedigree Shorthorn	—	661	261	103	1,025
Totals	5	737	277	106	1,125

Table showing yield of pure-bred and non-pedigree cows registered by the Ministry from the 1st October, 1933, to 30th September, 1934.

Breed.	Number of cows registered on a yield of :—				Total No. of cows registered.
	Gallons 500-600	Gallons 600-800	Gallons 800-1,000	Gallons over 1,000	
Pure-bred Shorthorn ..	—	71	33	2	106
British Friesian	—	—	—	—	—
Ayrshire	—	1	1	1	3
Kerry	8	10	—	—	18
Jersey	1	4	1	—	6
Non-pedigree Shorthorn	—	517	198	88	803
Totals	9	603	233	91	936

Table showing the yields of pure-bred and non-pedigree cows registered by the Ministry during the period 1st January, 1922, to 30th September, 1934.

Breed.	Number of cows registered on a yield of :—				Total No. of cows registered.
	Gallons 500-600	Gallons 600-800	Gallons 800-1,000	Gallons over 1,000	
Pure-bred Shorthorn ..	—	738	251	40	1,029
British Friesian	—	6	25	27	58
Ayrshire	—	24	12	3	39
Kerry	59	43	3	3	108
Jersey	13	26	15	—	54
Red Poll	—	1	2	—	3
Non-Pedigree Shorthorn	—	7,274	3,213	1,136	11,623
Totals	72	8,112	3,521	1,209	12,914

Table showing the number of Milk Recording Associations in Northern Ireland from 1921 to 1934.

County.	Number of Milk Recording Associations.													
	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1934	1934
Antrim ..	1	4	4	11	13	14	14	17	18	19	20	19	19	17
Armagh ..	1	1	1	4	4	5	6	6	7	7	7	8	8	8
Down ..	—	—	3	2	5	10	12	13	14	15	15	15	15	15
Fermanagh .	1	4	3	6	6	6	9	10	10	9	9	9	9	9
Londonderry	—	—	1	4	4	7	7	7	8	8	8	8	8	8
Tyrone ..	3	4	5	7	10	11	12	13	13	14	15	16	17	16
Totals ..	6	13	17	34	42	53	60	66	70	72	74	75	76	73

Table showing the number of members of Milk Recording Associations in Northern Ireland from 1921 to 1934.

County.	Number of Members.													
	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Antrim ..	43	156	168	394	488	447	540	634	596	647	690	607	541	522
Armagh ..	14	47	133	167	173	189	274	268	340	339	325	378	369	344
Down ..	–	–	115	68	186	425	502	531	594	605	567	568	531	508
Fermanagh	15	117	94	169	198	211	345	360	371	384	388	379	381	378
Londonderry	–	–	58	168	132	305	302	292	326	359	326	294	312	293
Tyrone ..	127	121	176	198	346	391	445	429	451	498	580	554	555	499
Totals ..	199	441	744	1,164	1,523	1,968	2,408	2,514	2,678	2,832	2,876	2,780	2,689	2,544

Table showing the number of cows entered in Milk Recording Associations in Northern Ireland from 1921 to 1934.

County.	Number of Cows entered in Associations.													
	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
Antrim	245	1,052	1,074	2,458	2,733	3,100	3,168	3,520	3,403	3,681	4,035	3,637	3,494	3,160
Armagh	112	192	506	747	680	859	1,016	1,008	1,156	1,316	1,506	1,602	1,625	1,693
Down	—	—	544	440	971	1,833	2,266	2,316	2,684	2,994	3,213	2,981	3,025	3,061
Fermanagh	133	931	698	1,119	1,044	1,034	1,668	1,805	1,881	1,906	2,024	2,034	2,251	2,257
Londonderry	—	—	306	922	824	1,793	1,750	1,638	1,849	2,039	1,935	1,769	1,934	1,956
Tyrone	754	934	1,210	1,417	1,861	2,264	2,297	2,320	2,426	2,634	2,892	2,981	3,172	2,923
TOTALS	1,244	3,109	4,338	7,103	8,113	10,833	12,165	12,607	13,399	14,570	15,605	15,004	15,501	15,050

Table showing the values of premiums awarded for first-year and second-year boars, respectively, in each of the six counties by the several County Committees in the years 1932, 1933 and 1934.

County.	1st Year Boars.			2nd Year Boars.		
	1932.	1933.	1934.	1932.	1933.	1934.
	£	£	£	£	£	£
Antrim	8	8	8	8	8	8
Armagh	8	8	8	8	8	8
Down	8	8	8	8	8	8
Fermanagh	9	8	8	9	8	8
Londonderry ..	9	8	8	9	8	8
Tyrone	7	7	7	7	7	7

Particulars of the number of premiums awarded in respect of first and second-year Boars in each county in the years 1932, 1933 and 1934 :—

County.	No. of 1st Year Boars			No. of 2nd Year Boars			Totals.		
	1932.	1933.	1934.	1932.	1933.	1934.	1932.	1933.	1934.
Antrim	21	35	35	17	17	30	38	52	65
Armagh	18	22	33	7	14	22	25	36	55
Down	24	25	36	11	19	20	35	44	56
Fermanagh ..	13	23	27	13	11	18	26	34	45
Londonderry ..	17	23	22	8	15	18	25	38	40
Tyrone	23	27	44	16	21	22	39	48	66
Totals	116	155	197	72	97	130	188	252	327

Table showing the numbers of boars of each breed (first and second year) awarded premiums in each county in the years 1932, 1933 and 1934.

County.	No. of Large White Ulster Boars.			No. of Large White (York) Boars.			Totals.		
	1932.	1933.	1934.	1932.	1933.	1934.	1932.	1933.	1934.
Antrim	32	33	25	6	19	40	38	52	65
Armagh	22	23	12	3	13	43	25	36	55
Down	18	24	12	17	20	44	35	44	56
Fermanagh ..	14	16	11	12	18	34	26	34	45
Londonderry ..	18	21	12	7	17	28	25	38	40
Tyrone	28	25	14	11	23	52	39	48	66
Totals	132	142	86	56	110	241	188	252	327

Table showing the amounts allocated by County Committees for premiums to boars in the years 1932, 1933 and 1934, and the actual expenditure in each county.

County.	Amount Allocated.						Totals.			Expenditure.		
	From Joint Fund.			From A. D. Vote.								
	1932	1933	1934	1932	1933	1934	1932	1933	1934	1932	1933	1934
	£	£	£	£	£	£	£	£	£	£	£	£
Antrim ..	250	225	224	64	200	272	314	425	496	321	416	519
Armagh ..	140	150	200	60	114	232	200	264	432	207	288	416
Down ..	200	224	240	108	160	216	308	384	456	280	352	448
Fermanagh	153	150	152	81	104	184	234	254	336	234	283	360
Londonderry	140	180	140	81	139	184	221	319	324	217	319	320
Tyrone ..	200	200	238	105	140	196	305	340	434	257	336	462
Totals ..	1,083	1,129	1,194	499	857	1,284	1,582	1,986	2,478	1,516	*1,994	*2,525

* Excess expenditure over allocation was defrayed by an advance from Agricultural Development Vote.

Table showing the operations of the Sheep-breeding Scheme in mountainous districts, 1931-32.

County.	Amount allocated.		Total No. of rams placed out.	Nett expenditure (cost of rams less receipts from sales).	Excess over ordinary allocation borne from agricultural development vote.
	From joint fund.	From agricultural development vote.			
	£	£		£ s. d.	£ s. d.
Antrim	80	250	59	202 11 9	122 11 9
Armagh	30	10	1	3 8 3	—
Down	80	90	14	64 4 6	—
Fermanagh ..	10	—	1	3 17 6	—
Londonderry ..	50	150	17	53 1 0	3 1 0
Tyrone	40	165	38	150 14 7	110 14 7
Totals	290	665	130	477 17 7	236 7 4

Table showing the operations of the Sheep-breeding Scheme in mountainous districts, 1932-33.

County.	Allocation		Total No. of rams placed out.	Nett expenditure (cost of rams less receipts from sales).	Excess over ordinary allocation borne from agricultural development vote.
	From joint fund.	From agricultural development vote.			
	£	£		£ s. d.	£ s. d.
Antrim	80	200	63	187 1 1	107 1 1
Armagh	20	50	—	—	—
Down	80	100	6	23 18 0	—
Fermanagh ..	10	—	—	—	—
Londonderry ..	50	100	18	47 11 8	—
Tyrone	40	200	24	84 7 0	44 7 0
Totals	280	650	111	342 17 9	151 8 1

Table showing the operations of the Sheep-breeding Scheme in mountainous districts, 1933-34.

County.	Allocation		Total No. of rams placed out.	Nett expenditure (cost of rams less receipts from sales).	Excess over ordinary allocation borne from agricultural development vote.
	From joint fund.	From agricultural development vote.			
	£	£		£ s. d.	£ s. d.
Antrim	60	200	61	205 9 9	145 9 9
Armagh	20	50	1	2 2 0	—
Down	80	80	19	83 18 0	3 18 0
Fermanagh ..	10	—	—	—	—
Londonderry ..	30	120	16	46 13 0	16 13 0
Tyrone	40	200	34	113 12 6	73 12 6
Totals	240	650	131	451 15 3	239 13 3

Table illustrating the operations of the Sheep-breeding Scheme in lowland districts, 1931-32.

County.	Allocation from joint fund	Number of premium rams by breeds and ages.					
		Breeds.		Ages.			Total.
		Border Leicester	Suffolk	1st shear	2nd shear	3rd shear	
	£						
Antrim	54	6	–	2	4	–	6
Armagh ..	48	6	–	2	3	1	6
Down	120	12	2	5	9	–	14
Fermanagh ..	42	5	–	3	2	–	5
Londonderry	81	10	1	3	8	–	11
Tyrone	66	10	1	9	2	–	11
Totals ..	411	49	4	24	28	1	53

Table illustrating the operations of the Sheep-breeding Scheme in lowland districts, 1932-33.

County.	Allocation from joint fund	Number of premium rams by breed and ages.				
		Breed.	Ages.			Total.
		Border Leicester	1st shear	2nd shear	3rd shear	
	£					
Antrim	54	8	4	2	2	8
Armagh ..	48	6	5	1	–	6
Down	120	13	7	6	–	13
Fermanagh ..	42	6	4	2	–	6
Londonderry	81	12	9	3	–	12
Tyrone	66	11	3	8	–	11
Totals ..	411	56	32	22	2	56

Table illustrating the operation of the Sheep-breeding Scheme in lowland districts during 1933-34.

County.	Allocation from joint fund	Number of premium rams by breed and ages.				
		Breed.	Ages.			Total.
		Border Leicester	1st shear	2nd shear	3rd shear	
	£					
Antrim	48	7	4	3	–	7
Armagh ..	60	8	3	5	–	8
Down	114	14	8	5	1	14
Fermanagh ..	48	8	5	3	–	8
Londonderry	60	12	3	9	–	12
Tyrone	60	8	5	3	–	8
Totals ..	390	57	28	28	1	57

GRANTS TO ASSOCIATIONS.

Apart from the grants made to Agricultural Show Societies through County Committees of Agriculture, special contributions were made by the Ministry directly to the funds of the under-mentioned Societies as follows :—

	1931–32.	1932–33.	1933–34.
	£	£	£
Ulster Farmers' Union (Educational Committee)	1,100 ..	900 ..	800
Ulster Agricultural Organisation Society Limited	600 ..	500 ..	500
Royal Ulster Agricultural Society	280 ..	280 ..	280
North West of Ireland Agricultural Society ..	120 ..	120 ..	120
Ulster Horticultural Society	75 ..	75 ..	75
Ulster Goat Society	50 ..	— ..	15
Ulster Ram Breeders' Association	50 ..	50 ..	50
World's Poultry Science Association ..	5 ..	5 ..	—
Northern Ireland Nurserymen's Association (Research)	— ..	— ..	125
Agricultural Research Institute (Poultry Research)	— ..	— ..	675

OFFICIALS OF COUNTY COMMITTEES OF AGRICULTURE AS AT 31st DECEMBER, 1934.

ANTRIM:

Chairman: Lieut.-Col. J. Patrick, D.L., Dunminning, Glarryford.
Vice-Chairman: Charles B. Smith, Cragoran, Larne Harbour.
Secretary: A. B. Clarke, B.A., County Courthouse, Belfast.
Instructors: P. T. O'Hare, A.R.C.Sc.I. (Agriculture).
R. D. Mackay, N.D.A., N.D.D. (Hons.) (Agriculture).
R. H. Clarke (Horticulture and Bee-keeping).
W. R. Saunderson (Horticulture and Bee-keeping).
Miss A. M. Nedwill (Poultry-keeping and Butter-making).
Miss A. G. Pollock (Poultry-keeping and Butter-making).
P. McHugh (Agricultural Overseer).
J. Boyd (Agricultural Overseer).

ARMAGH:

Chairman:	J. J. W. Dunlop, Rosemount, Annaghmore.
Vice-Chairman:	R. R. Murphy, J.P., Lislea, Keady.
Agricultural Organiser:	S. Jordan, B.Agr., 4 College Street, Armagh.
Instructors:	J. C. Patterson, B.Agr. (Agriculture).
	J. Hagan (Horticulture and Bee-keeping).
	J. Scrimgeour (Horticulture and Bee-keeping).
	Miss A. G. English (Poultry-keeping and Butter-making).
	J. Graham (Agricultural Overseer).
	M. Turley (Agricultural Overseer).

DOWN:

Chairman:	James Ireland, J.P., Ivyholme, Lessans, Saintfield.
Vice-Chairman:	George Wallace, J.P., Lakeview, Corbet, Banbridge.
Agricultural Organiser:	J. L. McWhinney, A.R.C.Sc.I., N.D.A., Northern Bank Chambers, May Street, Belfast.
Instructors:	R. W. Dickson, A.R.C.Sc.I. (Agriculture).
	R. F. Small, B.Agr. (Agriculture).
	J. H. Stewart (Horticulture and Bee-keeping).
	D. W. Baillie (Horticulture and Bee-keeping).
	Miss W. McMullen (Poultry-keeping and Butter-making).
	Miss L. Walters (Poultry-keeping and Butter-making).
	J. G. Jamieson (Agricultural Overseer).
	V. Boyce (Agricultural Overseer).

FERMANAGH:

Chairman:	Rev. Canon John Hall, Garvary, Enniskillen.
Vice-Chairman:	Major W. G. Nixon, D.L., Belcoo.
Secretary:	W. H. West, Courthouse, Enniskillen.
Instructors:	D. T. Ritchie (Agriculture).
	J. C. Johnston (Horticulture and Bee-keeping).
	Miss A. M. Callery (Poultry-keeping).
	T. C. Skelly (Agricultural Overseer).
	H. S. Flack (Agricultural Overseer).
	W. R. M. Boyd (Agricultural Overseer).

LONDONDERRY:

Chairman:	H. E. Thompson, M.B.E., J.P., Ballindrum House, Coagh, Moneymore.
Vice-Chairman:	W. McCollum, Drumcroon, Coleraine.
Secretary:	T. K. Caldwell, Courthouse, Coleraine.
Instructors:	T. H. Lowe, B.Agr. (Agriculture).
	A. McL. May (Horticulture and Bee-keeping).
	Miss E. E. McCluggage (Poultry-keeping and Butter-making).
	Miss E. E. Clarke (Poultry-keeping and Butter-making).
	A. J. McFarland (Agricultural Overseer).
	D. McMullan (Agricultural Overseer).
	E. Graham (Agricultural Overseer).

TYRONE:

Chairman:	John Johnston, Mountjoy East, Omagh.
Vice-Chairman:	Rowley Elliott, M.P., J.P., Craigon, Coagh.
Secretary:	W. Walsh, Courthouse, Omagh.
Instructors:	E. S. Daly, A.R.C.Sc.I., N.D.A. (Agriculture).
	W. J. Patterson, A.R.C.Sc.I., N.D.A. (Agriculture).
	D. C. Gamble, B.Agr. (Agriculture).
	D. McKenzie (Horticulture and Bee-keeping).
	Miss M. H. Davidson (Poultry-keeping .
	Miss S. M. Donaghy (Poultry-keeping).
	P. Dolan (Agricultural Overseer).
	J. M. Flanagan (Agricultural Overseer).
	J. McFerran (Agricultural Overseer).
	W. J. Martin (Agricultural Overseer).

EDUCATIONAL EXHIBITS AT AGRICULTURAL SHOWS.

As usual the principal Educational Exhibit of the Ministry was staged in each of the years under review at the Summer Show of the Royal Ulster Agricultural Society held at Balmoral. In the planning of the Exhibit, the different sections were, as far as possible, grouped as follows :—Crops, Live Stock, Poultry Keeping, Horticulture, Forestry, Dairying, Agricultural Education and Publications.

CROPS.

In this group of Exhibits the Research Divisions concerned included specimens and illustrations giving information on the progress which has been made in developing and testing new varieties of oats and flax, and of the suitability of various strains of rye grasses and of wild white clovers. Details of the Scheme under which seed is "certified" in England were given. Another exhibit endeavoured to show how pasture land may be cleared and kept comparatively clear of rushes.

The reduction in yields of potatoes due to the presence of certain virus diseases was demonstrated by small plots of growing plants and by heaps representing the yields of crops which had already been harvested. Another potato exhibit showed how new varieties are obtained, while a comparatively large space was devoted to the grading of seed and ware potatoes for export.

LIVE STOCK.

Most of the available space in the annexe of the Exhibition Hall was utilised for exhibiting live animals (mostly pigs and cattle) with which feeding or management experiments had been conducted. Four lots of pigs showed the results of using different protein foods as milk substitutes during the fattening period. Four other lots showed the results of using different starchy foods in providing the carbohydrate portion of the fattening ration. Two further lots demonstrated methods of feeding —one lot had free access to the food in an automatic feeder, while the other lot had a weighed quantity of the same meal mixture given them each day. Visitors were able to compare the cost of producing live weight increase in the cases of pigs of a typical pure breed and of those of two first crosses which had been fed and managed similarly by studying the results obtained from the three lots of pigs exhibited. Another pen contained a sow with her litter reared to the weaning stage. This exhibit gave details of the cost of rearing suckers to that stage.

Sows showing desirable points in conformation for the present day bacon trade and which could reasonably be expected to breed desirable type pigs were on view. Other sows showing undesirable points were stalled alongside for purposes of comparison. Finished pigs suitable and unsuitable for the Wiltshire cure were exhibited.

Two lots of animals from a calf-feeding experiment were stalled. The calves of one lot had got the usual allowances of whole and separated milk, while those in the other lot received only small allowances of milk in the early stages, and later on received no milk but were given a meal mixture containing fish meal and linseed cake in substitution of the milk. This test was very interesting to dairymen and to those who are faced with the difficulty of rearing calves when milk is scarce. Another test showed how the use of surplus potatoes reduced the outlay for concentrates for fattening bullocks.

Information on the destruction of warbles in cattle and on the purchase and use of feeding stuffs was given, while another Section dealt with such diseases of farm stock as hoose in calves, fluke in sheep, worms and anaemia in pigs, etc.

Useful information was given on the identification of those diseases which are notifiable under the Diseases of Animals Act.

POULTRY-KEEPING.

Special attention in this Section was given to demonstrating ways and means whereby the cost of producing eggs and table birds may be reduced, and whereby efficiency may be increased. The necessity for culling out unsuitable birds was emphasised. How losses in hatching and rearing may be traced to inherent weaknesses in the parent stock was shown. The difficulties experienced in hatching and rearing

were dealt with and means of overcoming these difficulties suggested. The housing of poultry occupied a large section : a model incubator room, brooder house, rearing house and laying house being on view. Other exhibits dealt with the feeding of poultry and showed how cheap but efficient rations may be made up. The necessity for avoiding low quality foods was stressed, and useful information on the various grades of Cod Liver Oil was given. Birds on which experiments had been carried out were shown.

Another exhibit dealt with quality in eggs and showed some of the causes on the farm which eventually lead to rapid deterioration of the eggs. Correct methods of collecting, grading, testing and packing were demonstrated. Another Section dealt with the more important diseases of poultry.

HORTICULTURE.

Partly as a result of tariffs on foreign produce and of an embargo on produce from certain areas on the Continent, an increased demand exists for home grown vegetables and garden crops. The number of enquiries on the production of these crops is rapidly increasing. A model of a vegetable garden containing growing crops was arranged. This showed the most suitable methods of cultivation. Information was given on rotations, on varieties and on the importance of using only seeds of high germinating quality. Methods of treatment of diseases and pests of vegetables were indicated. Another Section was devoted to the growing of glass house crops, while another dealt with experimental work on the control of diseases and pests which attack apple orchards. Methods of preventing and dealing with Accarine or Isle of Wight disease of bees were also shown.

FORESTRY.

The main forestry exhibit was intended principally to give information on the most suitable species of trees for planting under various conditions on farms and on waste ground in Northern Ireland Another Section dealt with the utilisation of home-grown timber for the making of gates, implements, equipment, etc., for the farm and home. Particulars of diseases which attack growing trees and also of fungi which cause various rots in wood were given. Details of the Ministry's Scheme for supplying young forest trees to farmers at cheap rates were shown, together with particulars of areas planted by the Ministry since 1922.

AGRICULTURAL EDUCATION—PUBLICATIONS.

Information was given on the type of training afforded at Greenmount Agricultural and Horticultural College, Ulster Dairy School, Cookstown, North-West School, Strabane, Winter Agricultural Classes and Dairying and Poultry Classes. Specimens of work done by the students were exhibited and full information relating to admission to the various courses was available. Copies of the Ministry's leaflets, circulars and priced publications were distributed.

The instructors employed by the County Committees of Agriculture assisted the members of the Ministry's staff at Balmoral in explaining the various exhibits to visitors, a large proportion of whom were farmers.

This show is open to the public during four days and as the total attendance usually exceeds one hundred thousand people it is regarded as an ideal place at which to stage an Educational Exhibit.

At least at one show in each County a somewhat similar exhibit was staged but necessarily on a much smaller scale. The exhibits at these shows were in charge of the staffs of the County Committees of Agriculture, but the Ministry lent assistance and materials.

APPENDIX IV.

Finance.

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ACCOUNTS OF PARLIAMENTARY GRANTS IN THE THREE YEARS ENDED 31st MARCH, 1934.

Class VI, Vote No. 1, Ministry of Agriculture.

(Moneys Voted by Parliament to defray the Salaries and Expenses of the Ministry of Agriculture).

Receipts.	1931/32			1932/33			1933/34		
	£	s.	d.	£	s.	d.	£	s.	d.
Parliamentary Grant	67,614	0	0	66,989	0	0	67,109	0	0
Receipts Appropriated-in-Aid:—	–	–	–	–	–	–	–	–	–
Fees recoverable under the Agricultural Produce (Meat Regulation) Act (N.I.), 1930 ..	5,469	9	7	5,695	18	10	5,533	0	7
Recovery from Government Loans Fund in respect of cost of loans administration ..	125	0	0	120	0	0	100	0	0
Recovery from the Imperial Government in respect of staff employed for the purpose of the Cattle (Import Regulation) Order, 1933	–	–	–	–	–	–	843	16	10
Recovery from Pigs Marketing Board (N.I.) in respect of expenses incurred under the Agricultural Marketing Act (N.I.), 1933	–	–	–	–	–	–	559	16	3
Recoveries on foot of agricultural loans redeemed under guarantee	256	11	4	192	11	6	–	–	–
Law costs and miscellaneous ..	98	1	0	103	7	9	39	7	8
Totals	£73,563	1	11	£73,100	18	1	£74,185	1	4

Payments.	1931/32			1932/33			1933/34.		
	£	s.	d.	£	s.	d.	£	s.	d.
Salaries, wages and allowances	59,309	19	10	59,304	17	3	61,223	9	0
Travelling, subsistence and removal expenses	5,948	18	2	6,779	15	9	6,550	2	0
Collection of agricultural statistics	2,096	15	6	2,063	17	11	2,931	13	10
Portal Inspection Offices, Works services	245	17	5	–	–	–	–	–	–
Printing	1,446	9	3	–	–	–	–	–	–
Stationery, books and office supplies	491	17	8	–	–	–	–	–	–
Stationery Office Publications (N.I.)	227	1	1	–	–	–	–	–	–
Law Charges	121	15	4	59	8	5	62	7	4
Postages, Telegrams and Telephones	2,588	2	4	1,977	0	3	2,150	8	4
Incidental expenses	663	11	11	558	8	6	571	11	1
Agricultural credits—losses in respect of loans for agricultural purposes	–	–	–	27	1	8	–	–	–
Balances on 31st March (to be surrendered)	422	13	5	2,330	8	4	695	9	9
Totals	£73,563	1	11	£73,100	18	1	£74,185	1	4

ACCOUNTS OF PARLIAMENTARY GRANTS IN THE THREE YEARS ENDED 31st MARCH, 1934.

Class VI, Vote No. 2, Agricultural Services.

Moneys voted by Parliament to defray the expenses of the Ministry of Agriculture in respect of Agricultural Education and Research, Improvement of live Stock, Agricultural Development, Afforestation, and Diseases of Animals, including sundry Grants-in-Aid.

Receipts.	1931/32	1932/33	1933/34
	£ s. d.	£ s. d.	£ s. d.
Parliamentary Grants	114,764 0 0	103,758 0 0	114,282 0 0
Receipts appropriated-in-aid :			
Fees for testing of seeds ..	265 17 6	342 16 1	226 5 11
Plant Breeding Division—sale of seed, etc.	133 17 4	115 11 6	212 18 1
Veterinary Research Division —fees for blood-testing of poultry, etc.	375 11 1	644 12 3	1,054 14 0
Fees for inspection of cows	79 0 0	79 14 1	74 8 5
Live Stock Breeding Acts— fees for licences, etc. ..	1,342 14 3	1,204 7 0	1,438 18 5
Fees payable by importers for maintenance of animals in quarantine	– – –	42 19 8	89 14 1
Egg-laying competitions—sale of eggs, etc.	1,122 13 0	1,185 11 9	1,127 6 10
Fees for licences under the Marketing of Eggs Acts and in respect of consignments exported	2,255 17 3	3,466 0 8	3,453 18 9
Fees for registration of premises under the Marketing of Dairy Produce Act (N.I.), 1929	117 0 0	126 0 0	128 0 0
Fees for licences under the Marketing of Potatoes Act (N.I.), 1928, and in respect of inspection of potatoes for export	3,535 9 6	3,865 5 1	3,170 15 5
Sale of potatoes and flax from experimental and propagation plots and under seed distribution schemes ..	422 15 9	318 17 1	831 18 10
Forestry, sale of timber, etc.	2,353 0 10	1,792 11 9	2,221 18 0
Recovery from the Empire Marketing Fund in respect of cost of special inquiries conducted by the Ministry	645 0 0	969 19 8	363 6 8
Fees under the Marketing of Fruit Act (N.I.), 1931 ..	11 0 0	51 0 0	31 1 0
Recoveries on foot of agricultural loans redeemed under guarantee	– – –	– – –	96 3 4
Miscellaneous	13 1 5	33 18 9	190 14 9
Totals .. .. ..£	127,436 17 11	117,997 5 9	128,994 2 6

Payments.	1931/32	1932/33	1933/34
	£ s. d.	£ s. d.	£ s. d.
Agricultural research and Faculty of Agriculture ..	18,601 17 7	17,356 13 10	17,615 17 5
Agricultural education (net)	7,939 2 0	6,369 8 11	6,612 14 3
Improvement of live stock (net)	7,429 6 8	8,276 16 8	8,576 19 11
Live Stock Breeding Acts ..	262 7 10	251 9 7	316 11 10
Animal Quarantine Station ..	152 13 1	76 9 3	97 5 1
Diseases of Animals Grants ..	12,851 12 3	5,673 12 6	4,949 0 5
Replacement of live stock ..	246 3 7	294 11 1	– – –
Poultry industry	390 16 5	1,802 10 6	1,628 15 4
Marketing of Eggs	3,257 7 5	4,928 15 8	5,434 18 7
Dairying Industry	379 0 9	323 13 0	305 12 0
Grants to County Committees	30,353 19 7	30,093 17 6	36,373 16 5
Grants to agricultural societies	2,724 17 9	2,360 15 11	3,084 2 4
Flax and Potatoes Industries	9,318 19 3	9,246 19 4	9,740 17 1
Grants for improvement of agricultural holdings (unemployment relief) .	5,270 16 4	4,680 9 10	4,814 11 11
Emergency grants in respect of damage due to flooding (unemployment relief)	161 0 8	– – –	– – –
Forestry	12,667 10 7	10,345 7 9	10,914 14 5
Forestry (unemployment relief)	1,928 12 0	2,055 9 10	2,020 14 10
Forestry (purchase of new areas)	5,522 8 0	– – –	4,904 0 0
Empire Marketing Schemes ..	970 4 0	1,502 3 9	816 14 4
Postages, telegrams and telephones	– – –	737 14 8	575 17 6
Agricultural credits	– – –	– – –	1,125 18 4
Miscellaneous	284 12 5	263 0 10	270 2 7
Balances on 31st March (to be surrendered)	6,723 9 9	11,357 5 4	8,814 17 11
Totals .. .. ..£	127,436 17 11	117,997 5 9	128,994 2 6

ACCOUNT OF PARLIAMENTARY GRANTS IN THE 2 YEARS ENDED 31st MARCH, 1933.

Class VI, Vote No. 3, Ministry of Agriculture.

Moneys Voted by Parliament to defray the Expenses of the Ministry of Agriculture in respect of Ordnance and Geological Surveys.

RECEIPTS.	1931-32.	1932-33.	PAYMENTS.	1931-32.	1933-34.
Parliamentary Grants	£9,436 0 0	£8,314 0 0	Salaries, wages and allowances ..	£7,801 0 5	£6,278 8 11
Receipts Appropriated-in-Aid (sale of maps, etc.)	1,171 13 9	1,977 15 0	Travelling, subsistence, and removal expenses	140 8 11	121 7 1
			Rent, rates and insurance	293 4 5	
			Fuel, light, water, cleaning articles, etc.	79 18 2	
			Maintenance, renewals, and repairs	223 2 11	
			Incidental expenses	52 5 6	60 9 4
			Postages, telegrams, and telephones	21 0 8	43 14 2
			Materials for map production	281 10 1	46 11 2
			Map Production, agency charges ..	1,422 11 10	2,230 8 4
			Geological survey		
			Balances on 31st March (to be surrendered)	292 10 10	1,510 16 0
TOTALS	£10,607 13 9	£10,291 15 0	TOTALS	£10,607 13 9	£10,291 15 0

Table showing by Counties the Amounts contributed from Local Rates and the Amounts contributed by the Government for the purpose of Agricultural Schemes under Local Statutory Committees during the three years ended 31st March, 1934.

County.	Rate in the £	Total Contributions from Local Rates.			State Contributions.						Total Contributions from Government Funds.		
					General Grant.			Grants for Special Schemes.					
		1931–32	1932–33	1933–34	1931–32	1932–33	1933–34	1931–32	1932–33	1933–34	1931–32	1932–33	1933–34
		£	£	£	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Antrim ..	1d.	2,553	2,553	2,555	*5,614 15 7	*5,651 10 0	*5,625 0 0	2,751 18 11	2,335 12 11	2,618 9 10	8,366 14 6	7,987 2 11	8,243 9 10
Armagh ..	1d.	1,440	1,430	1,418	2,816 19 3	2,832 0 0	2,809 10 0	1,982 8 3	1,605 18 8	1,645 11 3	4,799 7 6	4,437 18 8	4,455 1 3
Down ..	1d.	2,830	2,871	2,877	4,820 18 9	4,891 0 0	4,888 10 0	2,205 3 10	2,177 16 11	2,096 18 10	7,026 2 7	7,068 16 11	6,985 8 10
Fermanagh	1d.	950	950	950	2,647 19 5	2,698 0 0	2,698 0 0	2,870 6 0	2,801 0 3	2,372 12 7	5,518 5 5	5,499 0 3	5,070 12 7
London-derry	1d.	1,211	1,202	1,204	3,032 19 6	3,048 0 0	3,040 10 0	2,425 5 9	2,377 14 4	2,482 8 7	5,458 5 3	5,425 14 4	5,522 18 7
Tyrone ..	1d.	1,723	1,723	1,723	4,317 19 0	4,368 0 0	4,368 0 0	3,606 15 4	3,418 14 5	3,453 10 3	7,924 14 4	7,786 14 5	7,821 10 3
		10,707	10,729	10,727	23,251 11 6	23,488 10 0	23,429 10 0	15,841 18 1	14,716 17 6	14,669 11 4	39,093 9 7	38,205 7 6	38,099 1 4

* Includes grant of £1,000 per annum to Greenmount Agricultural College.

GENERAL CATTLE DISEASES FUND FOR NORTHERN IRELAND.
(16 Geo. V. C. 4).

Accounts of receipts and payments in respect of the General and Special Accounts of the above Fund for the three years ended 31st March, 1934.

GENERAL ACCOUNT.

Receipts.	1931/32	1932/33	1933/34
	£ s. d.	£ s. d.	£ s. d.
Balance on 1st April	1,755 7 10	2,093 13 4	2,770 7 3
Assessments on Local Authorities	13,414 3 11	6,415 0 3	5,475 0 6
Parliamentary Grant (Class VI, No. 2, Subhead C. 4) ..	4,851 12 3	5,367 17 1	4,710 0 11
Proportion of Fines in Prosecutions under the Diseases of Animals Acts	274 3 5	115 6 8	267 15 7
Bank Interest	33 13 6	55 3 10	21 3 4
Other Receipts :			
Law Costs Recoveries ..	– – –	1 11 6	– – –
	£20,329 0 11	£14,048 12 8	£13,244 7 7

Payments.	1931/32.	1932/33	1933/34
	£ s. d.	£ s. d.	£ s. d.
Recoupments to Local Authorities in respect of Compensation and Expenses under the Diseases of Animals Acts ..	10,118 13 9	11,269 5 11	10,606 0 2
Fees ..	– – –	1 1 0	
Travelling Expenses	– – –	2 6 8	
Miscellaneous Expenses ..	25 2 6		
	25 2 6	5 11 10	10 0 5
Transferred to Special Account	8,091 11 4	– – –	– – –
Balance on 31st March ..	2,093 13 4	2,770 7 3	2,628 7 0
	£20,329 0 11	£14,048 12 8	£13,244 7 7

SPECIAL ACCOUNT.

Receipts.	1931/32	1932/33	1933/34
	£ s. d.	£ s. d.	£ s. d.
Balance on 1st April	– – –	– – –	– – –
Parliamentary Grant (Class VI. No. 2 Subhead C. 4) ..	8,000 0 0	305 15 5	238 19 6
Salvage of Animals slaughtered in connection with :			
(1) Pleuro-pneumonia ..	– – –	– – –	– – –
(2) Swine Fever	– – –	– – –	– – –
(3) Foot and Mouth Disease	– – –	– – –	– – –
Transferred from General Account	8,091 11 4	– – –	– – –
Expenses of Witnesses in Court Proceedings	0 12 0	0 16 0	– – –
Advance from Civil Contingencies Fund	8,000 0 0	– – –	– – –
Refund in respect of Travelling Expenses (£2 8s. 8d.) and Salary (6/4)	– – –	2 15 0	– – –
Sale of Surplus Stores	– – –	– – –	53 4 9
	£24,092 3 4	£309 6 5	£292 4 3

Payments.	1931/32	1932/33	1933/34
	£ s. d.	£ s. d.	£ s. d.
Salaries of Staff	259 3 0	129 2 2	121 2 4
Fees	453 14 2	– – –	– – –
Travelling Expenses	1,367 19 8	88 6 11	28 6 10
Miscellaneous expenses including cost of requisites for cleansing and disinfection and casual labour in killing, burying, and branding and removal of animals, and other petty expenses :			
(1) Pleuro-pneumonia ..	– – –	– – –	– – –
(2) Swine Fever	85 5 2	19 6 0	12 12 7
(3) Foot and Mouth Disease	3,647 4 5	5 1 4	– – –
Compensation to owners of animals slaughtered in connection with :			
(1) Pleuro-pneumonia ..	– – –	– – –	– – –
(2) Swine Fever	850 3 11	67 10 0	130 2 6
(3) Foot and Mouth Disease	9,428 13 0	– – –	– – –
Transferred to General Account	– – –	– – –	– – –
Repayment to Civil Contingencies Fund	8,000 0 0	– – –	– – –
Balance on 31st March ..	– – –	– – –	– – –
	£24,092 3 4	£309 6 5	£292 4 3

EXPENDITURE ON AGRICULTURAL SCHEMES BY COUNTY COMMITTEES OF AGRICULTURE DURING THE 3 YEARS ENDED 31st MARCH, 1934.

Name of Scheme.	COUNTIES.																							
	ANTRIM			ARMAGH			DOWN			FERMANAGH			LONDONDERRY.			TYRONE			TOTALS		
	1931-32	1932-33	1933 34	1931 32	1932 33	1933-34	1931-32	1932 33	1933 34	1931 32	1932 33	1933 34	1931-32	1932 33	1933 34	1931 32	1932 33	1933-31	1931-32	1932-33	1933 34
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Itinerant Instruction in Agriculture	1,206 2 7	1,222 1 4	1,243 9 6	455 5 5	450 7 9	468 5 6	1,369 0 5	1,296 19 6	1,221 18 0	701 5 4	684 19 6	719 11 5	532 2 8	408 11 2	397 16 1	1,637 14 8	1,677 3 7	1,652 15 11	5,901 11 1	5,740 2 4	5,703 16 5
Winter Agricultural Classes ..	84 10 0	106 10 6	82 15 3	36 2 11	25 5 9	60 18 6	85 11 10	48 3 11	61 14 2	16 0 3	4 12 8	- - -	46 14 1	10 5 4	27 6 7	148 3 8	45 2 8	38 7 2	417 2 9	240 0 10	271 1 9
Horticulture and Bee-keeping ..	1,035 3 9	1,034 11 1	1,039 15 8	1,056 17 11	895 18 11	714 12 11	897 0 1	844 19 0	844 13 7	402 4 4	368 1 8	429 11 0	484 3 1	478 14 4	490 2 11	366 15 4	377 10 3	374 0 8	4,242 4 6	3,999 15 3	3,843 16 7
Poultry-keeping & Butter-making	1,504 6 0	1,553 11 9	1,629 14 8	790 7 4	832 18 10	868 9 6	1,585 11 1	1,645 2 6	1,737 17 10	884 17 0	894 5 0	953 9 7	1,197 13 11	1,136 10 11	1,249 1 6	1,536 16 11	1,559 16 10	1,593 15 4	7,479 12 3	7,681 14 10	7,824 2 11
Live Stock	3,546 10 2	2,838 0 8	3,029 8 8	2,062 5 8	1,706 5 0	1,165 6 2	3,811 11 10	3,351 5 10	3,706 11 2	2,856 7 10	2,361 6 6	1,285 11 9	2,257 10 11	2,028 9 0	2,125 11 7	3,116 10 11	2,904 10 6	2,731 2 5	17,650 17 4	15,519 17 6	14,043 11 9
Subsidies to Shows	419 15 1	397 5 0	368 4 2	166 13 11	156 18 9	146 13 4	273 16 9	424 13 4	326 4 4	82 0 0	80 11 0	70 5 8	161 5 6	155 16 6	141 10 4	257 7 10	191 18 11	156 7 4	1,360 19 1	1,407 3 6	1,209 5 2
Grants to Milk Recording Associations	200 0 0	190 0 0	190 0 0	65 0 0	85 0 0	75 0 0	165 0 0	155 0 0	155 0 0	95 0 0	95 0 0	95 0 0	70 0 0	70 0 0	80 0 0	145 0 0	155 0 0	165 0 0	740 0 0	750 0 0	760 0 0
Agricultural Overseers	605 18 9	591 17 1	573 7 9	574 8 8	570 7 6	615 12 4	614 11 5	567 0 10	643 1 7	690 0 6	879 8 4	715 6 6	829 11 8	780 1 8	815 12 10	1,073 11 6	1,122 18 0	1,108 16 1	4,388 2 6	4,511 13 5	4,471 17 1
Improvement of Pastures ..	107 18 4	145 0 1	89 4 5	81 14 0	49 16 2	47 6 3	- - -	22 15 3	- - -	200 10 11	- - -	155 12 1	95 19 1	88 19 4	82 19 6	207 13 2	101 17 2	99 0 3	693 15 6	408 8 0	474 2 6
Cottage and Farm Prizes ..	91 1 4	91 14 8	88 17 0	- - -	4 14 0	- - -	- - -	- - -	- - -	50 2 0	41 16 0	40 1 0	- - -	- - -	- - -	- - -	- - -	- - -	141 3 4	138 4 8	128 18 0
General Administration	991 8 1	980 14 11	879 8 6	644 2 9	678 7 7	726 5 9	744 2 2	697 8 0	792 10 7	601 18 6	583 17 0	561 19 4	792 7 5	869 6 1	833 8 5	971 11 8	929 18 4	925 0 4	4,745 10 7	4,739 11 11	4,718 12 11
Scholarships	1,442 1 2	2,241 13 9	2,610 15 8	211 2 6	240 18 9	277 0 0	946 5 0	906 0 0	971 15 0	144 10 0	170 7 6	218 17 6	417 12 6	490 0 0	427 17 6	370 17 6	499 0 10	303 16 3	3,532 8 8	4,548 0 10	4,810 1 11
Totals	£11,234 15 3	£11,393 0 10	£11,825 1 3	£6,144 1 1	£5,696 19 0	£5,165 10 3	£10,492 10 7	£9,959 7 8	£10,461 6 3	£6,724 16 8	£6,184 5 2	£5,196 5 10	£6,885 0 10	£6,887 3 1	£6,671 7 3	£9,812 5 2	£9,564 17 1	£9,148 1 8	£51,293 7 7	£49,684 13 1	£48,167 12 6

EXPENDITURE OF LOCAL AUTHORITIES (COUNTY COUNCILS) UNDER THE DISEASES OF ANIMALS ACTS AND THE ORDERS THEREUNDER, AND THE AMOUNTS RECOUPED TO LOCAL AUTHORITIES FROM THE GENERAL CATTLE DISEASES (NORTHERN IRELAND) FUND DURING THE THREE YEARS ENDED 31st MARCH, 1934.

Districts of Local Authorities.	Expenditure of Local Authorities.						Receipts from the dipping of sheep.			Total Net Expenditure.			Amounts recouped to Local Authorities during the three years ended 31st March, 1934.		
	Salaries and Allowances.			Other Expenses.											
	1931-32	1932-33	1933-34	1931-32	1932-33	1933-34	1931-32	1932-33	1933-34	1931-32	1932-33	1933-34	1931-32	1932-33	1933-34
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
County Antrim	1,309 3 4	1,455 18 1	1,703 3 3	1,528 3 8	1,197 3 9	1,105 10 4				2,837 7 0	2,653 1 10	2,808 13 7	2,064 5 6	2,009 6 6	1,961 10 4
,, Armagh	602 9 4	698 3 2	710 4 2	512 1 0	564 10 1	432 14 0				1,114 10 4	1,262 13 3	1,142 18 2	807 0 1	832 3 9	840 4 10
,, Down	1,515 13 5	1,819 17 8	1,792 5 1	2,200 19 1	2,746 17 1	2,147 16 8				3,716 12 6	4,566 14 9	3,940 1 9	2,990 10 9	3,523 13 11	3,194 19 8
,, Fermanagh	451 9 0	506 6 4	831 17 8	271 12 5	263 3 2	273 4 8	109 19 8	104 15 10	191 7 10	613 1 9	664 13 8	913 14 6	420 6 7	341 9 8	348 17 9
,, Londonderry	897 13 1	969 12 0	1,043 6 0	1,260 5 11	1,023 5 7	882 13 1	166 0 3	153 5 3	230 4 7	1,991 18 9	1,839 12 4	1,695 14 6	1,197 16 8	1,285 10 2	1,161 13 10
,, Tyrone	1,679 1 6	2,179 17 2	2,057 18 2	1,967 10 9	2,136 15 5	2,146 8 10	492 7 4	433 18 0	430 10 1	3,154 4 11	3,882 14 7	3,773 16 11	2,221 0 7	2,962 13 1	2,692 15 8
,, Borough of Belfast	350 0 0	329 11 8	262 10 0	100 7 6	82 7 8	330 10 3				450 7 6	411 19 4	593 0 3	264 17 6	240 18 10	312 5 7
,, Borough of Londonderry	115 0 0	102 10 0	187 10 0	39 0 0	20 0 0	73 7 6				154 0 0	122 10 0	260 17 6	152 16 1	73 10 0	93 12 6
	£6,920 9 8	£8,061 16 1	£8,588 14 4	£7,880 0 4	£8,034 2 9	£7,392 5 4	£768 7 3	£691 19 1	£852 2 6	£14,032 2 9	£15,403 19 9	£15,128 17 2	£10,118 13 9	£11,269 5 11	£10,606 0 2

SUMMARY OF AGRICULTURAL DEVELOPMENT LOAN ACCOUNTS ON 31st MARCH, 1934.

(Loans Advanced from Government Loans Fund through Ministry of Agriculture.)

Nature of Loan.	Loans o/s on 31/3/31.		Loans issued 1931/32.		Loans issued 1932/33.		Loans issued 1933/34.		Principal repaid 1931/34.	Interest received 1931/34.	Loans o/s on 31st Mar., 1934.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.			No.	Amount.
For the purchase of Stallions ..	22	1,066 2 9	2	90 0 0	6	335 10 10	2	166 13 4	1,097 3 0	123 5 7	15	561 3 11
For the purchase of Bulls ..	26	1,251 18 3	15	491 12 0	5	160 5 4	6	161 0 0	1,609 8 11	174 8 0	19	455 6 8
For the purchase of Agricultural Machinery ..	3	82 5 0	1	133 17 6	–	—	–	—	171 10 0	16 14 0	1	44 12 6
For the erection of Fencing ..	20	1,228 19 9	10	679 0 0	9	590 19 9	6	508 0 3	658 13 7	290 17 0	42	2,348 6 2
Land Improvement (to suplement grants)	10	402 8 0	2	70 0 0	2	60 0 0	3	120 0 0	344 16 0	57 8 4	16	307 12 0
Losses of Crops and Live Stock	56	3,313 0 0	–	—	–	—	–	—	1,073 11 4	438 12 1	54	2,239 8 8
TOTAL	137	7,344 13 9	30	1,464 9 6	22	1,146 15 11	17	955 13 7	4,955 2 10	1,101 5 0	147	5,956 9 11

STATEMENT OF LOANS FOR AGRICULTURAL PURPOSES GUARANTEED UNDER THE EXCHEQUER AND FINANCIAL PROVISIONS ACTS (NORTHERN IRELAND).

Nature of Loan.	Loans guaranteed prior to 1st January, 1932.		Loans guaranteed from 1st January, 1932, to 31st December, 1932.		Loans guaranteed from 1st January, 1933, to 31st December, 1933.		Loans guaranteed from 1st January, 1934, to 31st December, 1934.		Total guarantees to 31st December, 1934.		Total Repayments by Borrowers to 31st December, 1934.	Guarantees outstanding at 31st December, 1934.	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	Amount	No.	Amount
		£		£		£		£		£	£		£
Replacement of Live Stock, 1925, 1927 and 1928 ..	1,649	77,948	—	—	—	—	—	—	1,649	77,948	77,643	11	305
Purchase of Live Stock, 1930/34	575	24,427	81	2,600	877	34,575	117	4,262	1,650	65,864	17,893	1,611	47,971
Purchase of Seeds and Artificial Fertilisers, 1929/34	159	2,702	97	754	15	220	5	97	276	3,773	3,513	22	260
	2,383	105,077	178	3,354	892	34,795	122	4,359	3,575	147,585	99,049	1,644	48,536

STATEMENT SHOWING THE TERRITORIAL DISTRIBUTION OF LOANS FOR AGRICULTURAL PURPOSES GUARANTEED UNDER THE EXCHEQUER AND FINANCIAL PROVISIONS ACTS (NORTHERN IRELAND).

County	1932.		1933.		1934.		Total to 31st December, 1934.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
		£		£		£		£
Antrim	3	89	27	2,195	4	240	34	2,524
Armagh	26	516	139	3,444	17	562	182	4,522
Down	8	201	69	7,085	10	257	87	7,543
Fermanagh	97	1,253	420	12,916	64	2,240	581	16,409
Londonderry	2	40	48	2,878	4	160	54	3,078
Tyrone	42	1,255	189	6,277	23	900	254	8,432
	178	3,354	892	34,795	122	4,359	1,192	42,508

STATEMENT SHOWING THE TERRITORIAL DISTRIBUTION OF GRANTS PAID UNDER THE SCHEME FOR IMPROVEMENT OF AGRICULTURAL HOLDINGS.

County.	Up to 31/3/31.		1931/32.		1932/33.		1933/34.		Total to 31/3/34.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
		£		£		£		£		£
Antrim	71	1,769	91	2,208	97	2,339	110	1,987	369	8,303
Armagh	17	354	7	224	8	254	8	193	40	1,025
Down	37	1,341	19	307	19	437	22	345	97	2,430
Fermanagh	19	895	18	806	8	307	5	329	50	2,337
Londonderry	31	1,163	30	694	26	385	27	598	114	2,840
Tyrone	23	1,092	14	476	22	372	30	730	89	2,670
TOTALS	198	6,614	179	4,715	180	4,094	202	4,182	759	19,605

APPENDIX V.

FORESTRY.

The forestry policy of the Ministry was continued on the usual lines. Additional lands were acquired at Ballycastle (112 acres), Shane's Castle, County Antrim (418 acres); Altadavin, Favor Royal, County Tyrone (12 acres); Meencraig (627 acres) and Gortnamoyagh, County Londonderry (465 acres). The total area now under the control of the Ministry is 16,836 acres.

The total area planted during the three-year period was 3,042 acres or an average of 1,014 acres per annum.

It will be observed from Table I and that a total of 810 acres was planted when the Ministry took possession and that a further area of 8,295 acres has since been planted by the Ministry, representing approximately 15,389,000 trees.

In Table II particulars are given of the number and species of trees planted at each centre during the period. The species were nearly all coniferae, the percentage of each species planted being as follows :—

Norway and Sitka Spruce	63.4
European and Jap. Larch	17.1
Scotch and Other Pines	12.8
Douglas Fir	2.9
Others	3.8

GRANTS FOR PLANTING.

Under this Scheme whereby grants may be given to persons who undertake to plant trees on a commercial scale on their lands, four applications were received and approved, and work was commenced. In a number of other cases where grants had been approved in previous years some clearing and planting was done and the grants were duly paid.

SUPPLIES OF TREES FROM THE MINISTRY'S NURSERIES.

The Scheme was continued under which farmers were supplied at reduced prices with young trees for planting from the Ministry's Nurseries. 248 persons availed themselves of this scheme and were supplied with approximately 365,000 trees.

GENERAL.

In accordance with Section 32 (1) (2) of the Irish Land Act, 1909, occupiers of holdings purchased under the Irish Land Acts must obtain the permission of the Ministry before cutting down or uprooting trees which are necessary for the ornament or shelter of the holdings. During the period such permission was sought and granted in seven cases.

TABLE I.

PROGRESS OF PLANTING.

CENTRE.	Total Area.	Area planted when Ministry took possession.	AREA PLANTED								Total area planted up to 30th September 1934.
			1921–22 1922–23 1923–24 1924–25 1925–26 1926–27	1927–28	1928–29	1929–30	1930–31	1931–32	1932–33	1933–34	
Baronscourt	acres 3,031	acres 179*	acres 1,309.25	acres 162.3	acres 222.5	acres 185	acres 167.25	acres 139.5	acres 136.75	acres 142.5	acres 2,644.05
Ballykelly, Cam Mountain, Springwell Mountain, Drumramer, Ballycrum, Leck, Meencraig and Gortnamoyagh	3,849	53.5	56.5	7.5	3	98	147	217.8	281.4	330.38	1,195.08‡
Castlecaldwell	303	103	114.5	10	6.5	1.5	3.5	—	3.5	2.5	245‡
Knockmany and Favor Royal	964	168	149.5	61.8	147.5	102	129.5	58.0	65	30.1	911.4‡
Newcastle, Castlewellan, and Tollymore Park ..	1,701	100	509.25	119.8	88	81.5	77.5	59.8	90.2	91.8	1,217.85‡
Hillsborough	437	—	—	—	60	89.75	45.5	58.0	29.5	21	303.75‡
Tardree and Carnearney	735	75†	—	—	113	99.5	91	97	99	106.75	681.25
Glenarm	447	96†	—	—	100	102.5	91.25	51.36	2.5	—	443.61
Rostrevor and Fathom Wood	4,139	36†	—	—	—	114.5	126.5	200	234.25	196.95	908.2‡
Ballycastle	812	—	—	—	44	94.5	120	101.6	103	92.4	555.5
Shane's Castle	418	—	—	—	—	—	—	—	—	—	—
TOTALS	16,836	810.5	2,139	361.4	784.5	968.75	999	983.06	1,045.1	1,014.38	9,105.69

* This area was under wood when the land was acquired. Since that time 33½ acres have been cut over, thinned and under planted. Fires occurred in certain areas of young woods at Newcastle, Favor Royal and Fathom Wood which were replanted in 1935.

† These areas of Tardree, Glenarm, Rostrevor and Fathom Wood were under young wood when the land was acquired. At Glenarm also an area of 12 acres of mature woods was taken over and has since been cut over by the Ministry.

‡In addition, the following areas are under old wood, including shelter belts and scrub-covered areas ; Ballykelly, 85 acres ; Castlecaldwell, 47 acres ; Knockmany, 25 acres ; Hillsborough 50 acres ; Rostrevor, 180 acres ; Tollymore Park, 300 acres ; Shane's Castle, 20 acres.

TABLE II.

PLANTATIONS MADE DURING THREE-YEAR PERIOD 1st OCTOBER, 1931 TO 30th SEPTEMBER, 1934.

FOREST.	Area Planted (Acres)						Species planted including replacements (thousands).						
	Afforested		Re-afforested		Total								
	Conifer	Broad Leaved	Conifer	Broad Leaved	Conifer	Broad Leaved	Pines	European and Jap Larch	Douglas Fir	Norway and Sitka Spruce	Beech	Others	Total
Baronscourt	142.25	—	276.5	—	418.75	—	87.08	28.375	38.25	605.5	2.245	5.07	766.52
Castlecaldwell	6	—	—	—	6	—	—	—	2	16	—	—	18
Knockmany and Favor Royal	113.75	—	39.35	—	153.1	—	30.135	47.45	24.45	184.2	1.025	15.925	303.185
Newcastle, Castlewellan and Tollymore Park	176.6	—	65.2	—	241.8	—	86.2	256.79	20.5	47.65	20.11	5.45	436.7
Hillsborough	14.5	—	68	26	82.5	26	9.75	21.6	49.6	90.45	30.96	52	254.36
Tardree and Carnearney ..	264.25	—	38.5	—	302.75	—	115.75	21.2	—	461.46	.25	26.03	624.69
Glenarm	51.36	—	2.5	—	53.86	—	—	73.0	4.2	34.92	6.6	5.7	124.42
Rostrevor and Fathom Wood	523.45	—	107.75	—	631.2	—	201.5	339.405	29.95	591.225	1	33.17	1,196.25
Ballykelly, Cam Mountain, Springwell Mountain, Drumramer, Ballycrum, Leck, Meencraig, Gortnamoyagh	811.5	—	18.08	—	829.58	—	151.69	54.49	—	1,329.13	1.75	6.4	1,543.46
Ballycastle	285	—	12	—	297	—	59.36	148.23	1.2	323.23	.5	6.91	539.43
Shane's Castle	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	2,388.66	—	627.88	26	3,016.54	26	741.465	990.54	170.15	3,683.765	64.44	156.655	5,807.015

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